

IMPORTANT SAFETY INSTRUCTIONS

Your Elna 6600 sewing machine is designed and constructed for HOUSEHOLD use only. Read all instructions before using this machine.

DANGER – To reduce the risk of electric shock:

1. Your sewing machine should never be left unattended when plugged in. Always unplug the machine from the electrical outlet immediately after using and before cleaning.
2. Always unplug before replacing light bulb. Replace bulb with same type rated 12 Volts, 5 watts.
3. Do not reach for the machine if it has fallen into water. Unplug immediately.
4. Do not place or store machine where it can fall or be pulled into a tub or sink. Do not place it in or drop it into water or other liquid.

WARNING – To reduce the risk of burns, fire, electrical shock or injury:

1. Do not allow machine to be used as a toy. Supervision is necessary when this machine is used by or near children.
2. Use this sewing machine only for its intended use as described in this manual. Only use attachments recommended by the manufacturer as described in this manual.
3. Never operate this machine if it has a damaged cord or plug, is not working properly, has been dropped or damaged or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. This machine is equipped with a special connection cord which, if damaged, must be replaced by an identical cord. This can be obtained from your dealer.
5. Never operate the sewing machine with any air opening blocked. Keep ventilation openings of the sewing machine and foot control free from the accumulation of lint, dust and fibers.
6. Never drop or insert any object into any opening.
7. Do not use outdoors.
8. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
9. To disconnect, turn machine off and remove plug from outlet.
10. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
11. Keep fingers away from all moving parts, especially the needle.
12. Always use the proper needle plate. The wrong plate can cause the needle to break.
13. Do not use bent needles.
14. Do not pull or push fabric while stitching. This may deflect the needle causing it to break.
15. Switch the sewing machine off when making any adjustment in the needle area, such as threading needle, changing needle, threading bobbin, changing presser foot, etc.
16. Always unplug the sewing machine from the electrical outlet when removing covers, lubricating or making any other servicing adjustments mentioned in the instruction manual.

SAVE THESE INSTRUCTIONS IMPORTANT

Be sure to keep machine away from static electricity, heat sources, humidity and direct sunlight.

USA only

Your machine comes equipped with a polarized plug (one prong wider than the other). A polarized plug reduces the risk of electrical shock. This plug is intended to fit into a polarized outlet. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

Use only foot control model 21371 for sewing machine model 6600 (UL, CSA).

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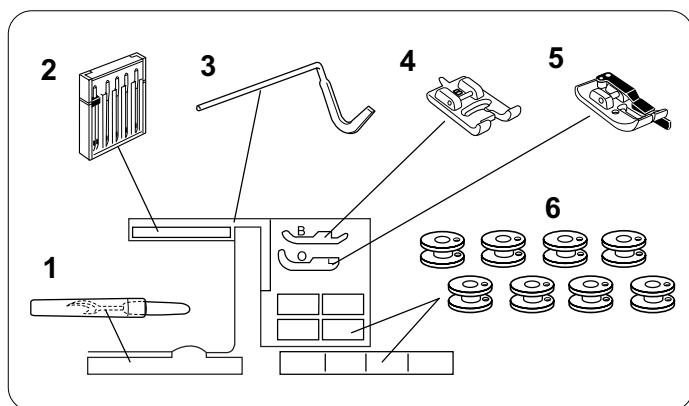
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NOTE: Information found in this instruction manual is current at the time of printing. Elna reserves the right to change and update specifications and information as needed.

SECTION I - Machine Parts and Functions

Part Names

1. Top cover (lift up and back)
2. Stitch chart
3. Top storage compartment
4. Bobbin winder spindle
5. Bobbin winder stop
6. Selection keys
7. LCD screen
8. Side storage compartment
9. Knee lifter insert channel
10. Light panel
11. Speed control lever
12. Up/down needle key
13. Auto-lock key
14. Reverse key
15. Start/stop key
16. Bobbin cover plate release button
17. Bobbin cover plate
18. Extension table (storage box)
19. Needle plate
20. Circular sewing pivot points
21. Needle threader
22. Thread cutter
23. Face plate
24. Foot pressure dial
25. AUTO tension LED
26. LED screen brightness control
27. Needle thread tension dial
28. Spool pin
29. Needle clamp screw
30. Needle
31. Presser foot
32. Shank
33. Thumbscrew
34. Carrying handle
35. Presser foot lever
36. Buttonhole lever
37. Free arm
38. Feed dog lever
39. Machine sockets
40. Power switch
41. Flywheel (always turn towards you)

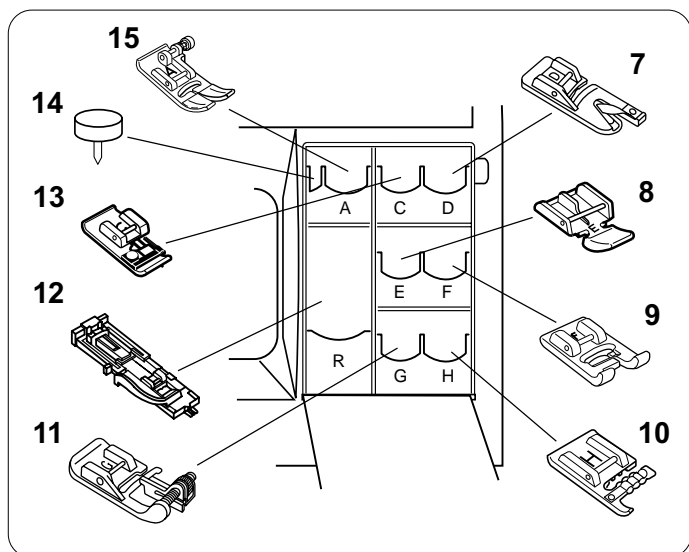


Standard Accessories

Top Cover

(Lift up and back)

1. Seam ripper
2. Set of needles
3. Quilt guide
4. B: Buttonhole foot (4-step)
5. Scant 1/4 inch foot
6. Bobbins (8 + 1 in machine = 9 total)

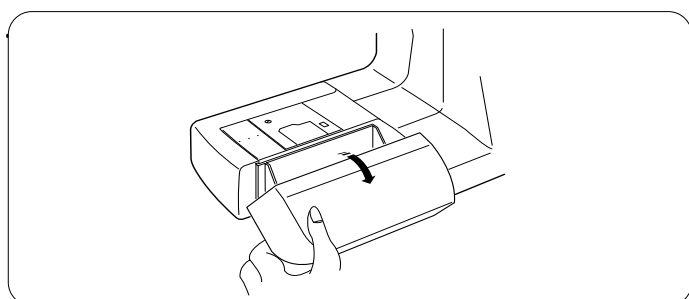


Side Cover

(Pull down Side Cover to open)

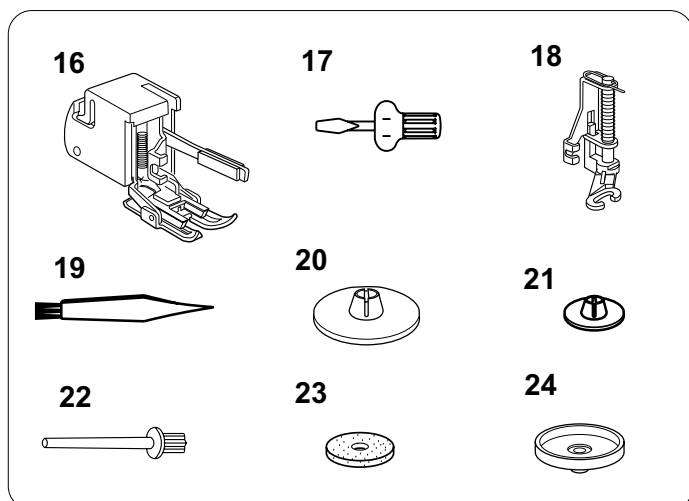
7. D: Hemmer foot
8. E: Zipper foot
9. F: Satin stitch foot
10. H: Multi-cord foot
11. G: Blind hem foot
12. R: Automatic buttonhole foot
13. C: Overlock foot
14. Circular sewing pivot pin
15. A: Standard metal foot (attached to machine)

Storage compartments can be tilted forward for easy access.

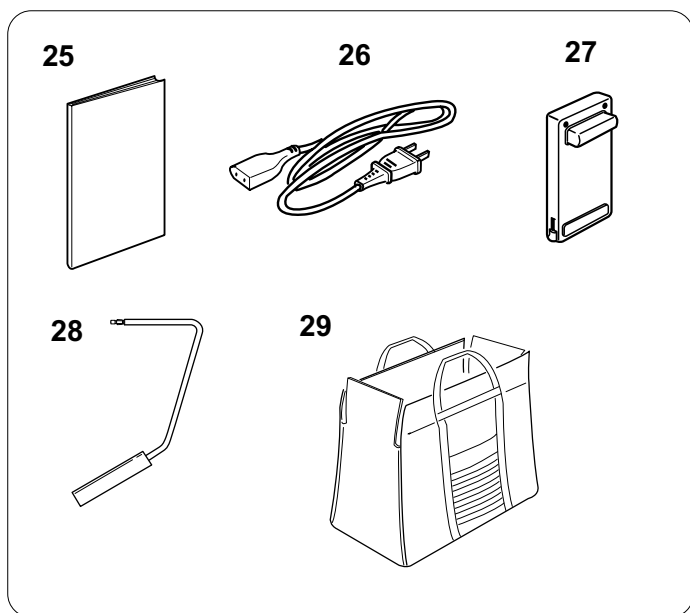


Extension Table (Storage Box)

Accessories are stored inside the extension table. Pull lid towards you to open the storage box.

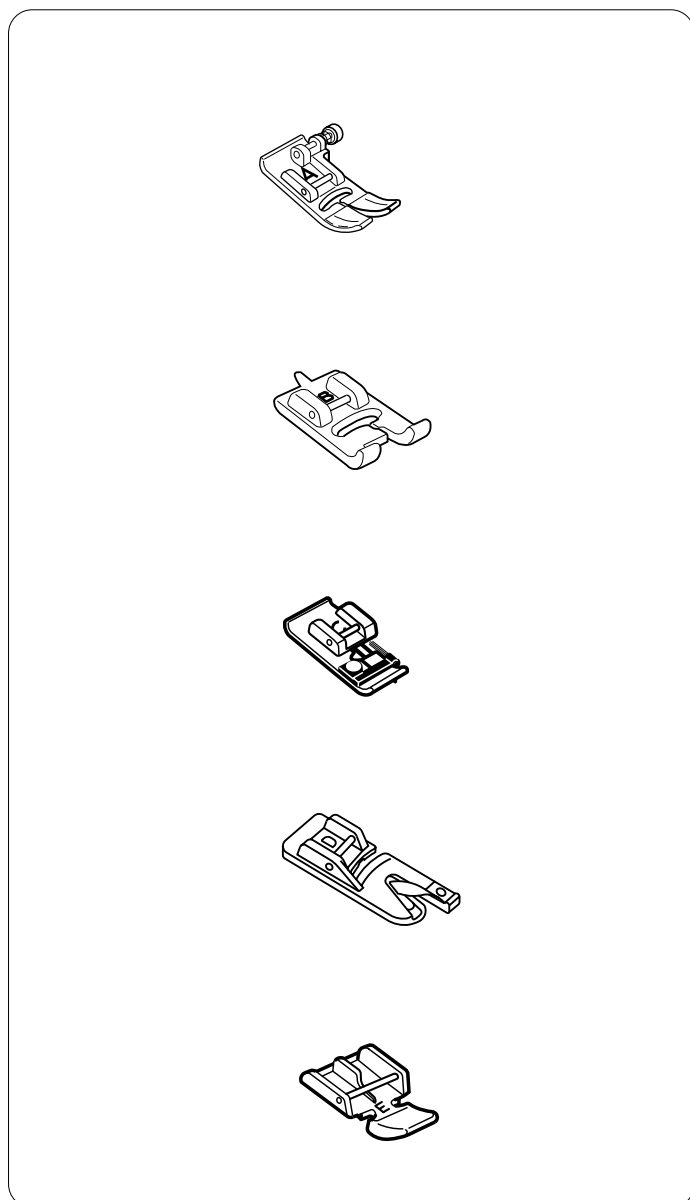


16. Open toe walking foot
17. Large screwdriver
18. P-2: Open toe embroidery/darning foot
19. Lint brush
20. Large spool holder
21. Small spool holder
22. Additional spool pin
23. Spool pin felt
24. Spool stand



Machine Box

- 25. Instruction book
- 26. Power supply cord
- 27. Foot control
- 28. Knee lifter
- 29. Carrying bag



Presser Foot and Accessory Definitions

A: Standard Metal Foot

This foot comes attached to your machine. It is mainly used for straight stitches and zigzag stitches longer than 1.0. The button locks the foot in a horizontal position helping to sew over multiple layered seams.

B: Buttonhole Foot

Sew oversized buttonholes for novelty buttons or a decorative accent. The two cutout grooves on the underside of the foot ensure that the buttonhole sides lie parallel to each other.

C: Overlock Foot

Prevent fabric edges from raveling by finishing the edge with a zigzag stitch. The wires/brush on the foot help the stitch lie flatter and reduce puckering. Use with medium weight fabrics.

D: Hemmer Foot

Insert the fabric into the spiral on this foot. The spiral rolls the fabric, creating a rolled hem. An easy, professional way to sew hems.

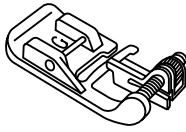
E: Zipper Foot

Use when sewing zippers into place. The grooves on the underside ensure the foot glides over the zipper coil. Attach either to the left or right of the needle to sew each side of the zipper.



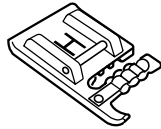
F: Satin Stitch Foot

The cutout on the underside of the foot is designed to accommodate dense stitch formation. Ideal when sewing satin and decorative stitches.



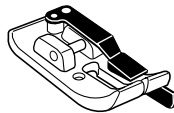
G: Blind Hem Foot

The guide on the foot helps ensure that the needle catches only one or two fibers of the hem, resulting in an invisible hemline.



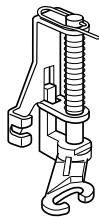
H: Multi-Cord Foot

Design your own braids or trims. Place one to three cords in the foot and sew over cord(s) for a simple couching method. Or sew over one cord with a zigzag to gather heavier weight fabrics.



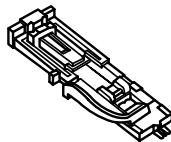
Scant 1/4" Foot

Accuracy is the key to successful patchwork/quilt sewing. Sewn from 3.5 needle position; the guide on the foot provides a perfect 1/4" seam. Or use 4.5 needle position and achieve the desirable scant 1/4" often requested by quilters.



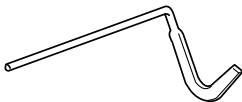
P-2: Open Toe Embroidery/Darning Foot

Skipped stitches are no longer a concern when sewing free motion embroidery, stippling, darning and monogramming. The spring-loaded foot moves up and down at the same time as the needle. Another benefit when using this foot is that the front cutout provides maximum visibility.



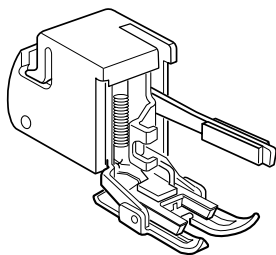
R: Automatic Buttonhole Foot

Place button in foot to determine the buttonhole size. The machine will automatically sew the corresponding buttonhole.



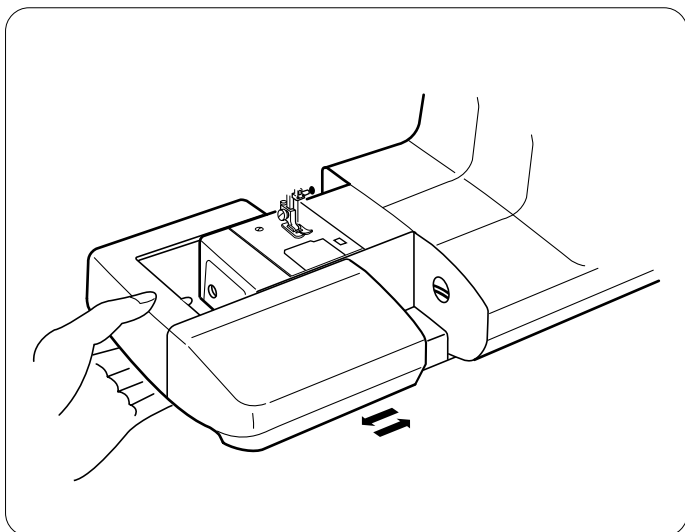
Quilt Guide

The quilt guide is helpful when sewing parallel, evenly spaced rows of stitching. May be used with a Open Toe Walking Foot.



Open Toe Walking Foot

Great for keeping quilt layers from shifting when sewing and keeping stripes and checks matched. Fabrics lie between an upper feed dog (on walking foot) and lower feed dog (on machine) to move fabrics simultaneously, preventing them from slipping.



Extension Table and Free Arm

Extension Table

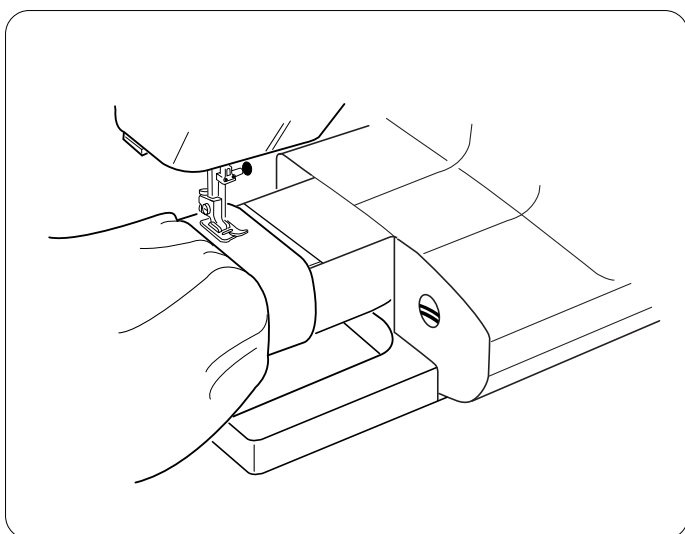
The extension table provides more sewing space to make sewing easier. The extension table can be easily removed for free arm sewing.

To Remove:

Pull the end of the extension table away from the machine, as shown.

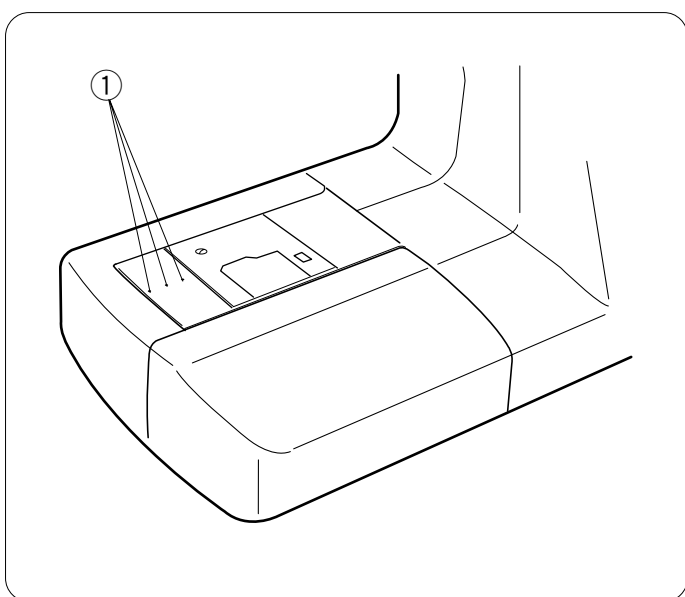
To Attach:

Push the table back into place to reattach the extension table.



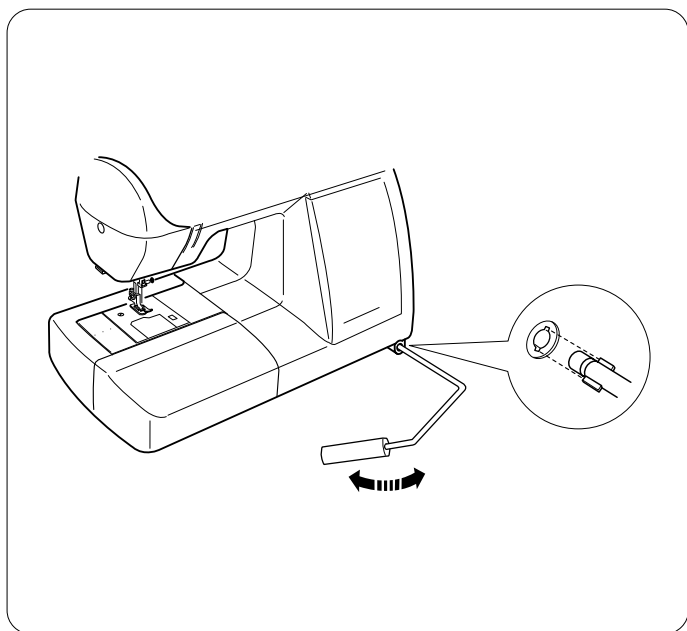
Free Arm

Free arm sewing is good for circle areas like sleeves, waistbands and pant legs. If socks, knee or elbow areas need mending, the free arm will be best to use.



Circular Sewing Pivot Points

The free arm has holes ① that are 1 cm apart from each other. Use the holes to sew circles and scallops with the circular sewing pivot pin. See page 66.



Knee Lifter

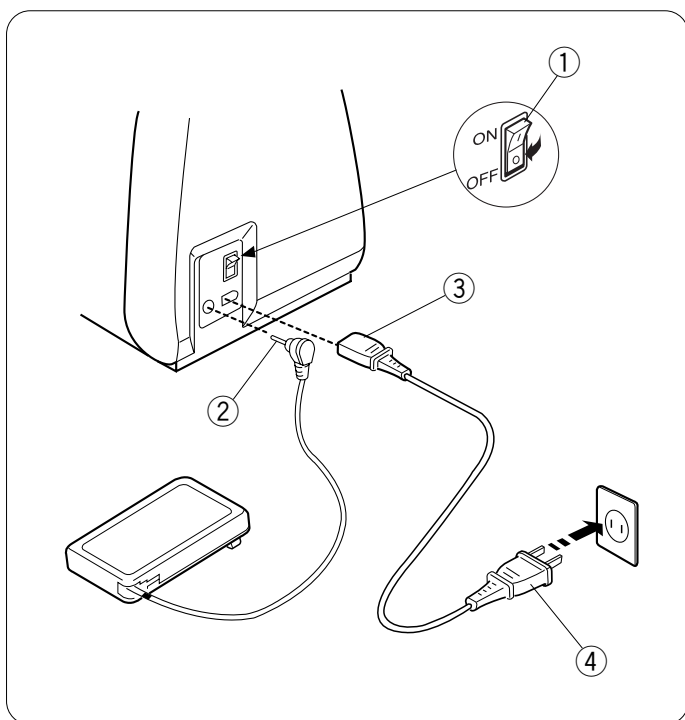
The knee lifter allows you to raise or lower the presser foot without using your hands. This is especially beneficial when pivoting corners or sewing patchwork pieces.

Insert knee lifter aligning the slots with the notches.

The presser foot rises equal to the amount of pressure applied to the knee lifter. Stop sewing before moving the knee lifter to the right to raise the presser foot. Release the knee lifter to lower the presser foot.

CAUTION:

Do not touch the knee lifter while sewing; the fabric will not feed properly and the stitches will not form correctly because the tension discs will open.



Connecting Machine To Power Supply

Before connecting the power cord, make sure the voltage and frequency shown on the machine are identical to your electrical power.

To connect machine to power supply, turn off the power switch ①. Insert the foot control plug ② and machine plug ③ into the machine and the power supply plug ④ into the wall socket.

Your machine may come equipped with a polarized plug (one prong wider than the other). A polarized plug reduces the risk of electrical shock. This plug is intended to fit into a polarized outlet. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

IMPORTANT: When using your sewing machine the first few times, place waste fabric under the presser foot and run the machine without thread for a few minutes. Wipe away excess oil.

NOTE: After turning off the machine, wait 5 seconds before turning it on again.

For Your Safety

Do not use extension cords or plug adapters.

Do not touch plug with wet hands.

Always turn off the power/light switch first and then unplug from the electrical outlet. Examples:

- when leaving the machine unattended
- when cleaning the machine

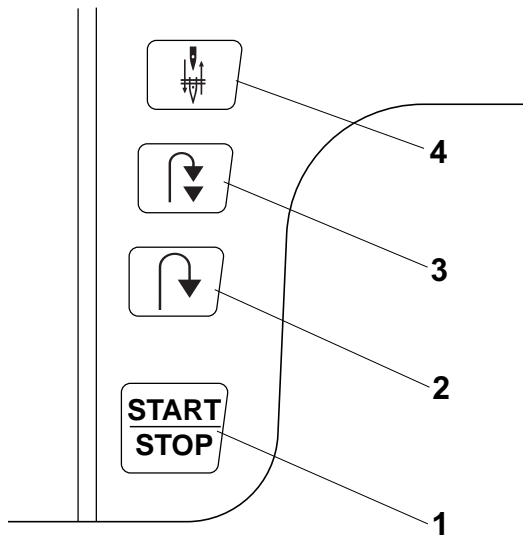
Always turn off the power/light switch:

- when attaching or removing parts such as needle, presser foot, needle plate
- when threading needle or bobbin

Do not place anything on the foot control.

Do not place heavy items on cords. Do not subject cords to heat. Do not use damaged cords. Have the cord repaired immediately.

While the machine is in operation, always keep your eye on the sewing area and do not touch any moving parts such as the thread take-up lever, flywheel or needle.



Main Function of Keys

1. START/STOP Key

Press this key to start the machine. The first few stitches will be sewn at a slow speed and then machine sews at the speed set by the speed control lever. Press key again to stop machine. Press and continue to hold key to sew at slow speed, release key to sew at set speed. Press key again to stop.

NOTE: The foot control must be detached to use this key.

2. Reverse Key

If you are sewing 1 (straight stitch), 2 (zigzag stitch) or 3 (3-step zigzag stitch), press and hold this key. The machine will sew in reverse until you release the key with or without using the foot control or START/STOP key.

* If you are sewing any other stitches, utility or decorative, the machine will immediately stop and sew a lockstitch when you press this key.

3. Auto-Lock Key

Press this key while sewing 1 (straight stitch), 2 (zigzag stitch) or 3 (3-step zigzag stitch) and the machine will sew a few stitches in place and stop automatically.

* Press this key while sewing utility or decorative stitches and the machine will complete the stitch, lockstitch and stop.

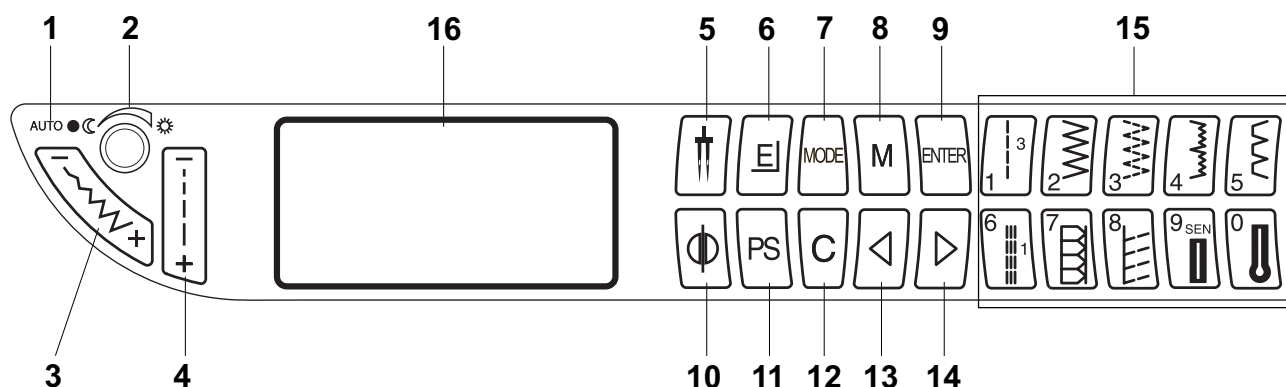
4. Up/Down Needle Key

If the needle is up when you press this key, the needle will go down to its lowest position. The needle will continue to stop in the down position.

If the needle is down when you press this key, the needle will go to its highest position. The needle will continue to stop in the up position.

NOTE: The needle will always stop in the up position after sewing buttonholes.

Keyboard Selection Keys



1. AUTO tension LED



The “AUTO” LED indicates the needle thread tension setting.

Green Light – Needle thread tension is set on “AUTO”

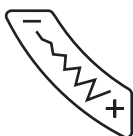
No Light – Needle thread tension is manually set between 0 and 9.

Flashing Light – Selected stitch requires a manual setting.



2. LCD Screen Brightness Control

Lighten or darken the screen with this dial.



3. Stitch Width and Needle Position Key

Press “–” or “+” side of key to change setting.

Press “–” or “+” to move needle position left or right.

Straight stitches (1, 6, 031, and 078) can be sewn from many needle positions by pressing the “–” or “+” side of the key.

Center needle position is 3.5.



4. Stitch Length Key

Press “–” or “+” side of key to change setting. Depending on the stitch selected, stitch length can be set between 0.0 and 5.0.

NOTE: Fine fabrics should have a stitch length between 1.5 and 2.5, medium fabrics between 2.0 and 3.0 and heavier fabrics between 3.0 and 4.0.



5. Twin Needle Key

Press this key to reduce the width of an individual stitch. The twin needle symbol is shown in the LCD screen when it is activated. Press the key again to cancel twin needle function.



6. Elongation Key

Satin stitches 035 to 050 can be lengthened up to five times their regular size without the stitch length varying. Press this key to change the elongation. The LCD screen displays the elongated size; X1, X2, X3, X4 or X5.

7. Select Mode Key



When you switch on the machine, the Direct Select Mode is active. You can select the first ten stitches (illustrated on the keyboard) with a single touch of the key.

Touch the "MODE" key to activate the 3 Digit Mode. You can select all stitches by entering the 3 digits for the desired stitch.

Touch "MODE" key again to reactivate the Direct Select Mode.

8. Memory Save/Recall Key



The 3 Digit Mode has three separate memories for saving a sequence of stitches. Press this key to activate memory 1 (M1). Press key again to activate M2. Once a memory is activated, press the "ENTER" key to save the sequence.

To recall a saved memory, press "M" key until desired memory appears. To activate the saved sequence, press "Mirror Image" key.

9. Enter Key



Press this key after selecting a stitch in the 3 Digit Mode and that stitch will be memorized. Up to 50 stitches can be combined.

These stitches cannot be memorized into a sequence: 009 - 023 and 030.

10. Mirror Image Key



When this key is pressed after selecting a stitch in the 3 Digit Mode, the stitch will be flipped horizontally (as it appears on the stitch chart).

If you are in a permanent memory (M1, M2, or M3), press this key to recall the saved sequence.

11. My Personal Setting Key



Select a stitch in Direct Select Mode and override the factory settings by changing width/needle position or length. Press this key after changing settings. Press "ENTER" key. New settings will now be saved as the default settings with PS symbol in LCD screen.

12. Clear Key



When this key is pressed, the last memorized stitch or the stitch that is above the cursor will be cleared. Press and hold the "C" key; the entire sequence is cleared. If this key is pressed and held after sewing a sequence, the sequence will be deleted.

13. Review Memory Left Key



Use this key to review stitches in a memorized sequence when all stitches do not appear on the screen.

OR

Press this key to move the cursor left until it is under the stitch that will be edited.

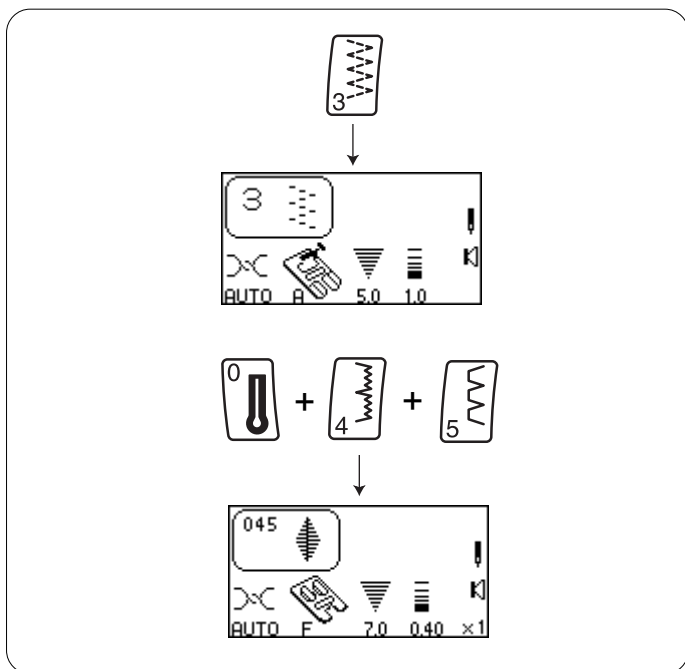
14. Review Memory Right Key



Use this key to review stitches in a memorized sequence when all stitches do not appear on the screen.

OR

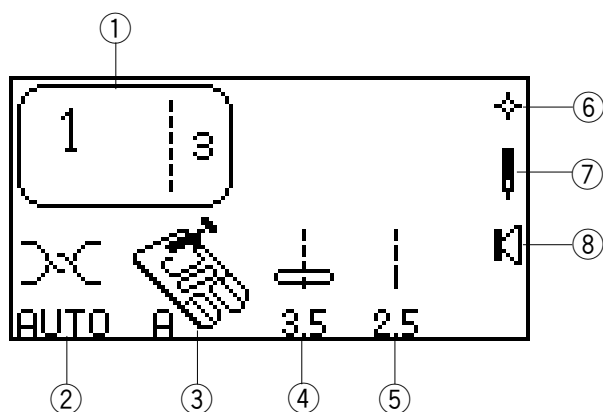
Press this key to move the cursor right until it is under the stitch that will be edited.



15. Stitch Selection Keys

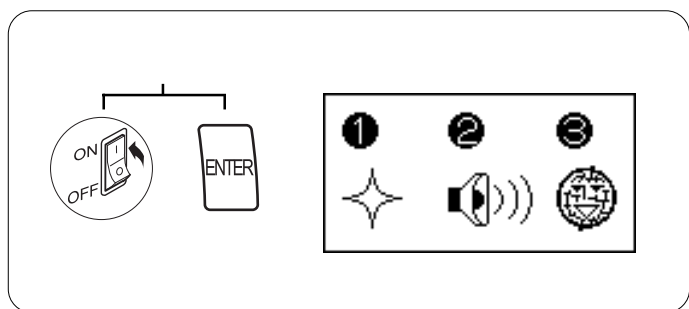
You can select a stitch in the Direct Select Mode by pressing the key that is illustrated with the desired stitch.

To select stitches in the 3 Digit Mode, simply press the three digits for the desired stitch. To cancel the stitch you selected, press the “C” key or select a different stitch.



16. Symbols in the LCD Screen

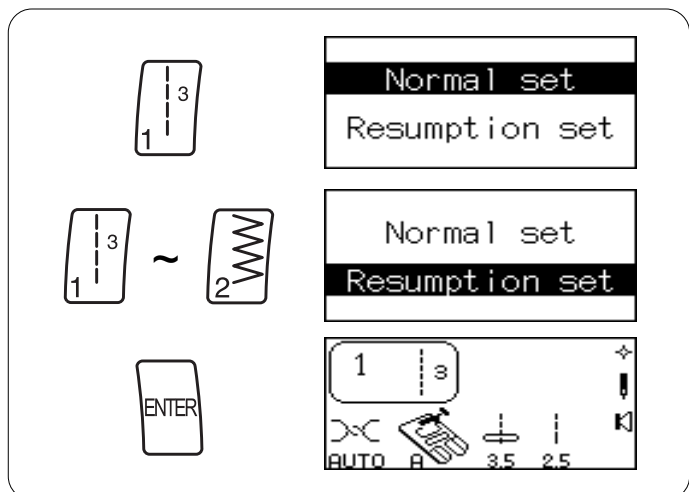
- ① Selected stitch.
- ② Recommended setting for needle thread tension dial. (If the dial is not set on “AUTO”, a numerical value is shown.)
- ③ Elna recommends using this presser foot for best sewing results.
- ④ Stitch width or needle position – computer automatically sets width or needle position after a stitch is selected.
- ⑤ Stitch length – computer automatically sets length after a stitch is selected.
- ⑥ Quick Resumption Mode. Switch off the machine. The last stitch(es) that were sewn will appear when machine is switched on. See pages 14-15.
- ⑦ Twin or single needle. See page 64.
- ⑧ Sound Mode. Machine beeps after touching any key. See pages 14-15.



Setting Quick Resumption, Sound and Language Modes

These three modes/functions can be set according to your preferences. Each new setting requires you to turn OFF the power switch.

Turn ON the power switch while pressing “ENTER” key. Message screen appears. Press “1” key to change quick resumption or “2” key to change sound or “3” key to change language.

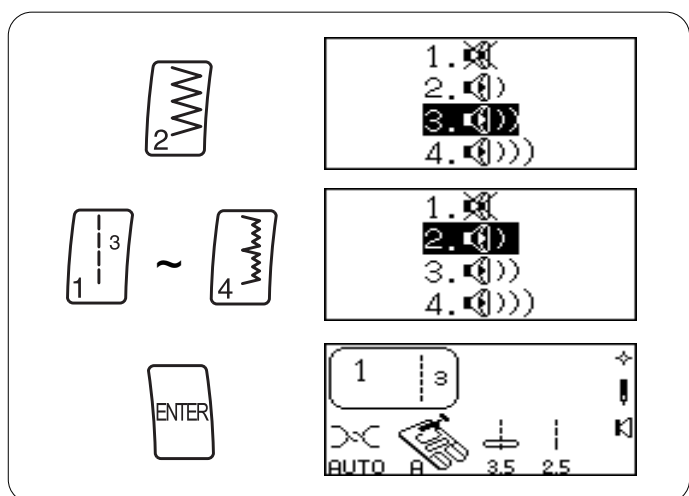


Quick Resumption – The last stitch or memorized sequence of stitches that were sewn will appear when machine is switched on.

Press “1” key.

Press “1” or “2” key to change setting between Normal Set and Resumption Set.

Press “ENTER” key.

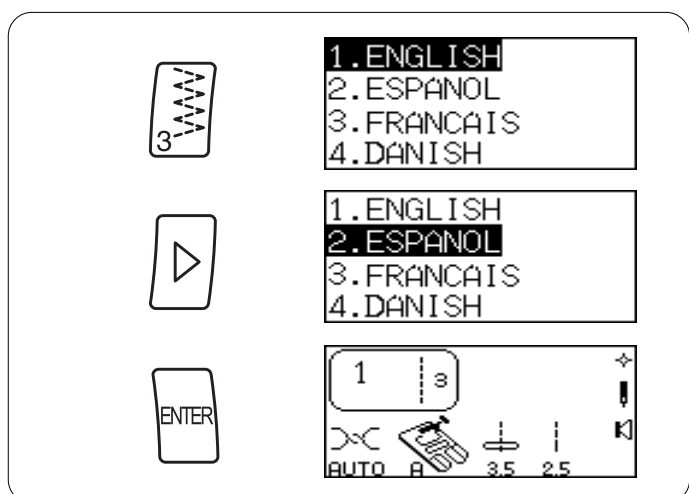


Sound – Turn off the beep sound (warning beep sounds will not be turned off) or change the beep volume.

Press “2” key.

Press “1”, “2”, “3”, or “4” key to change between settings.

Press “ENTER” key.

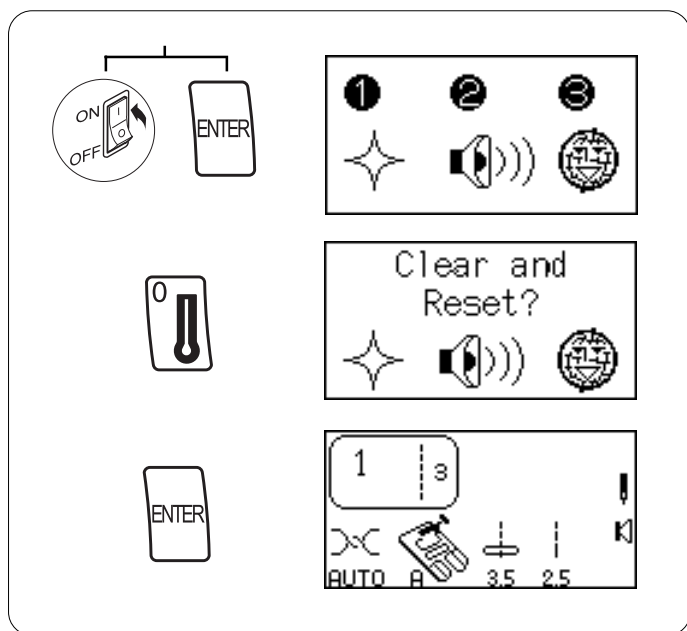


Language – Choose one of the 10 languages: English, Spanish, French, Danish, German, Italian, Dutch, Russian, Slovenian or Swedish.

Press “3” key.

Press “Review Memory Right” key or “Review Memory Left” key to change between languages.

Press “ENTER” key.



Reset to Factory Default

It is possible to reset the machine to the factory defaults with English language as default.

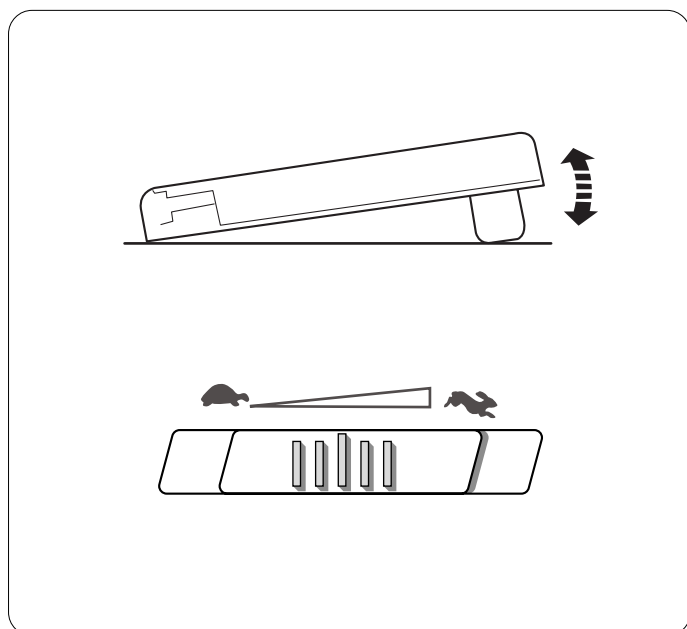
Turn OFF the power switch. Press “ENTER” key while turning power switch ON. Message screen appears.

Press “0” key. Message screen appears.

Press “ENTER” key to confirm and reset to factory default.

OR

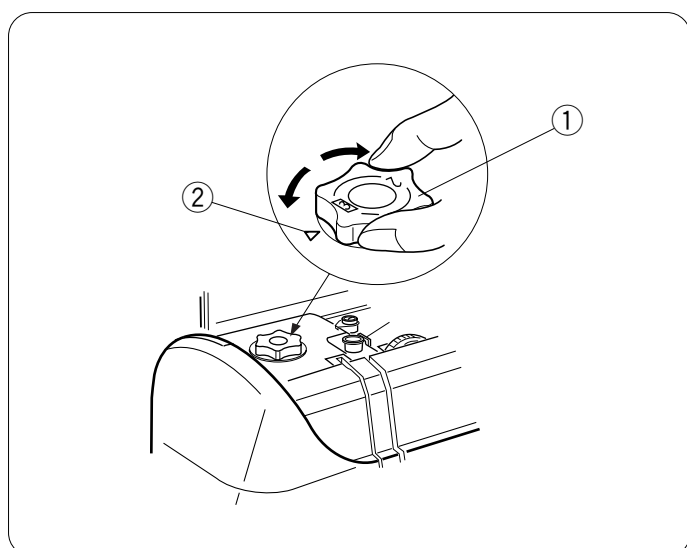
Turn off power switch to cancel the reset.



Controlling Sewing Speed

Sewing speed can be varied with the foot control. The harder you press on the foot control, the faster the machine runs.

The maximum sewing speed can be varied by sliding the speed control lever. For a faster speed, slide it to the right; for a slower speed, slide it to the left.

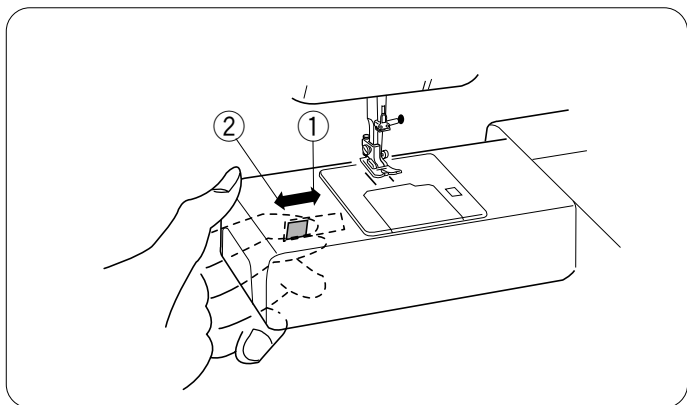


Foot Pressure Dial

Align the foot pressure dial ① with the setting mark ② at “3” for regular sewing.

Reduce the pressure to “2” for appliqué, cutwork, drawn work, basting and embroidery.

Velours and knits with a lot of stretch may require a “1” setting.

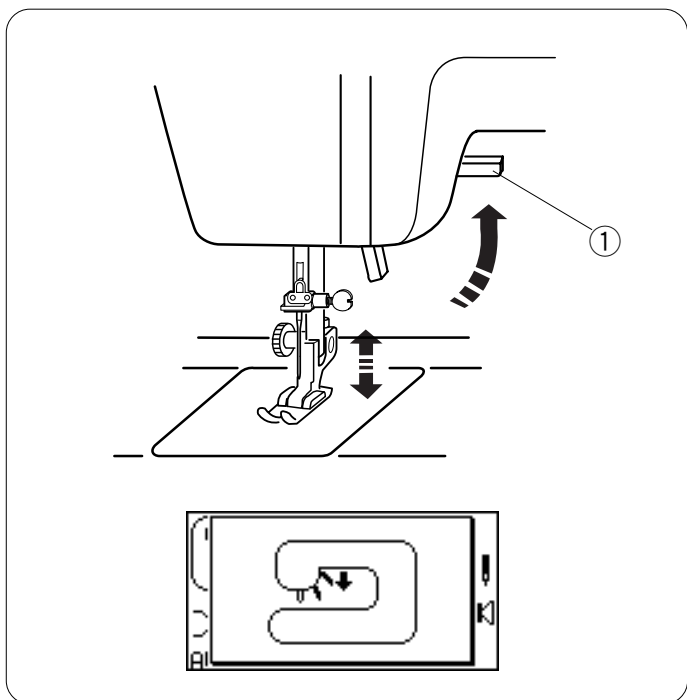


How To Drop the Feed Dog

The feed dog can be dropped out of position for special sewing techniques: free motion embroidery, stippling, button sewing, etc.

The feed dog must always be up for regular sewing.

Locate the feed dog lever on the back of the free arm. Slide the lever either to the right (down) ① or to the left (up) ②. To bring up the feed dog, hand turn the flywheel after sliding lever to the left.

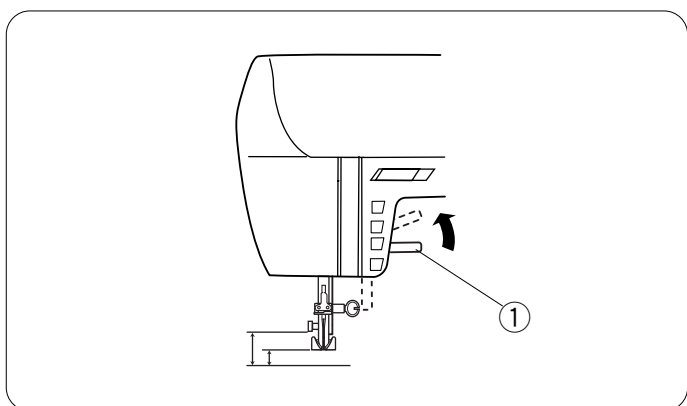


Presser Foot Lever

Raise and lower the foot with this lever ①.

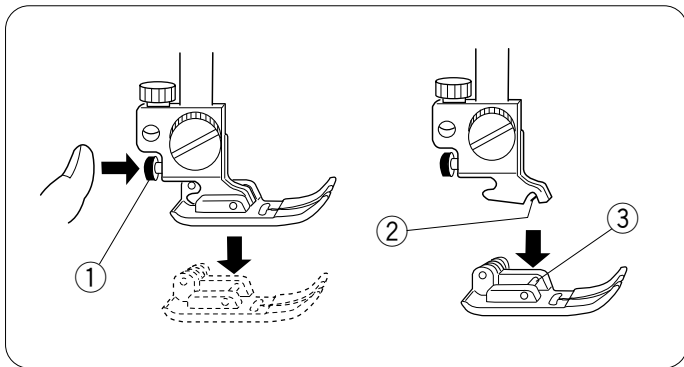
Before sewing can occur, the presser foot must be lowered to close the tension discs.

If you attempt to sew with the foot in the up position, the LCD screen will show this message illustration to remind you to lower the foot, and the machine will emit a warning beep.



Additional Presser Foot Clearance

You can raise the presser foot about 6.5 mm (1/4") higher than the normal up position for easy removal of the presser foot or to place heavy fabrics under the presser foot. Pull the presser foot lever ① up beyond the normal up position.

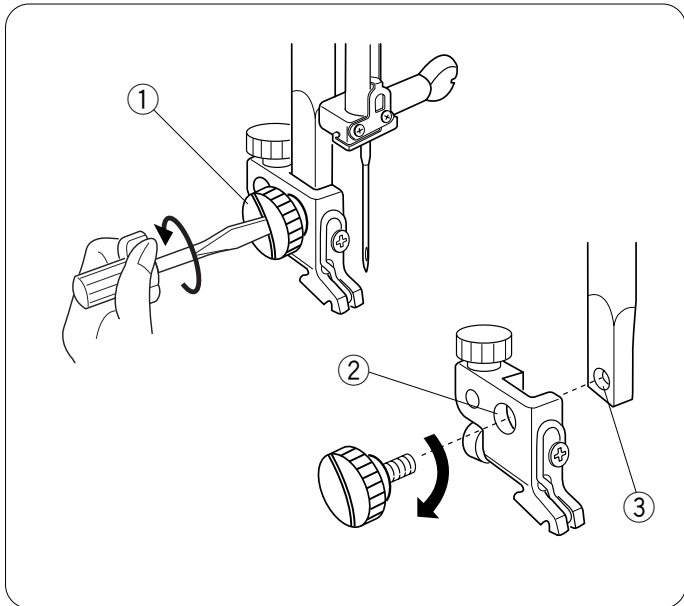


Attaching and Removing Presser Feet

Press the “Up/Down Needle” key until the needle is in the raised position.

Turn OFF the power switch. Raise the presser foot and press the red button ① on back of the shank. The presser foot will drop off.

Place the selected presser foot so the pin ③ on the foot lies just under the groove ② of the shank. Lower the presser bar and attach the foot.

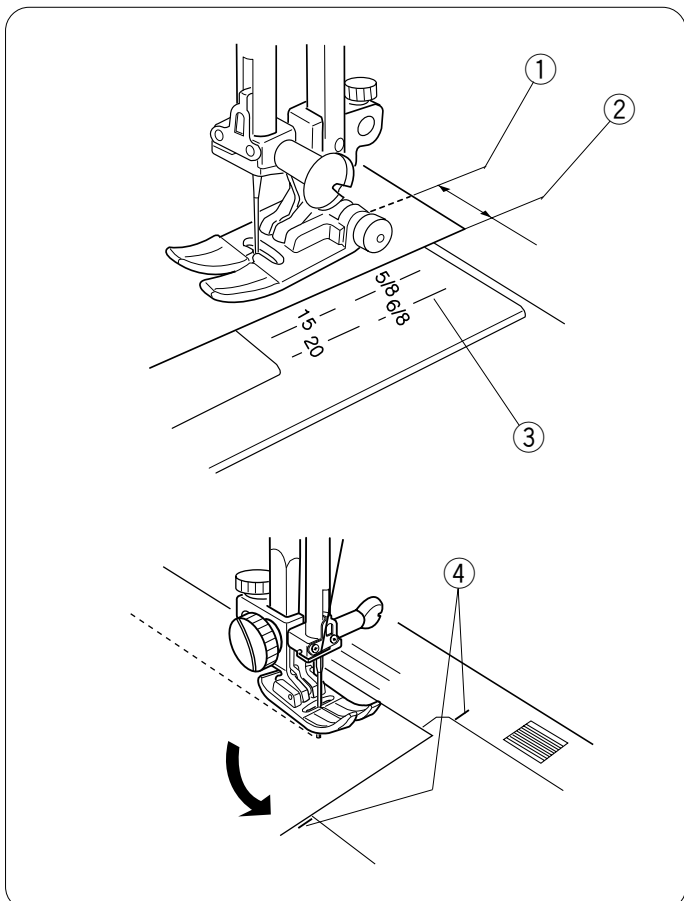


Attaching and Removing Shank

Turn OFF the power switch. Raise the presser bar.

Turn the thumbscrew ① counterclockwise with the screwdriver to remove the shank.

To attach, match the hole in the shank ② with the hole in the presser bar ③. Put thumbscrew in hole and turn clockwise to tighten.

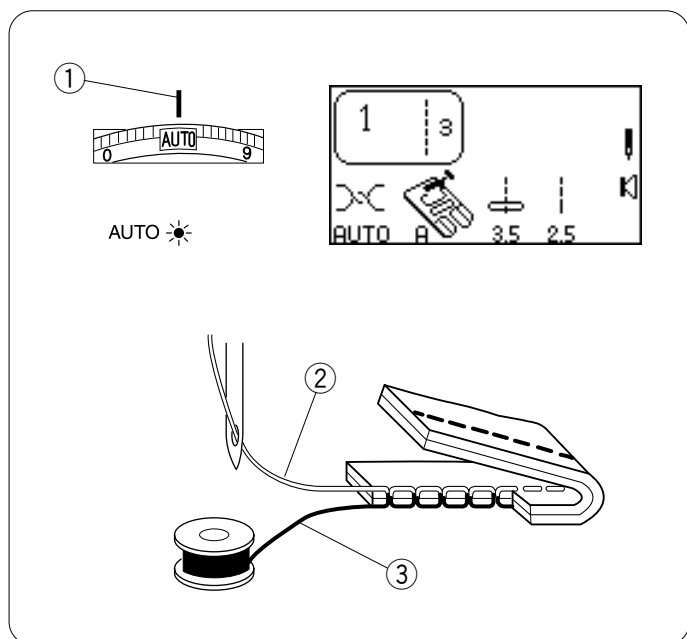


Seam Allowance Lines

The lines on the needle plate, machine bed and bobbin cover plate help you measure seam width.

The number indicates the distance between the center needle position (3.5) and the seam allowance line.

- ① Center needle position
- ② Edge of fabric
- ③ Guidelines
- ④ 90° pivot angle guideline for 5/8"



Adjusting the Needle Thread Tension

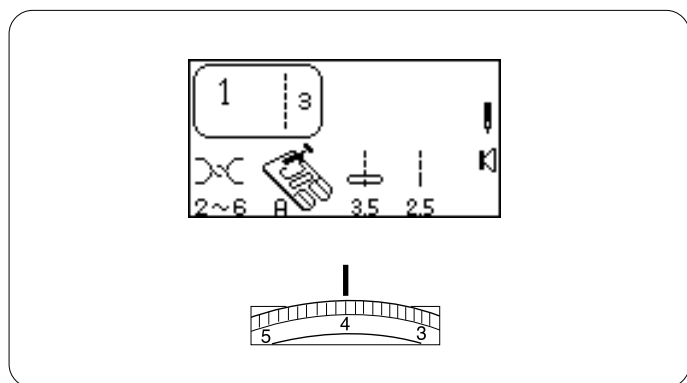
Choosing the Correct Tension - Straight Stitch

The ideal straight stitch will have threads locked between the two layers of fabric, as shown left (magnified to show detail). The “AUTO” setting on the needle thread tension dial should be aligned with the setting mark ①. A green light will appear.

If you look at the needle thread ② (top thread) and bobbin thread ③ (bottom thread), you will notice that there are no gaps. Each stitch is smooth and even.

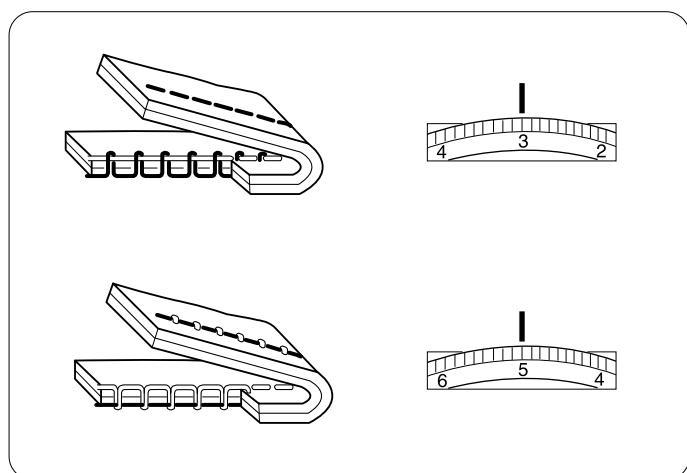
Occasionally the needle thread tension needs to be adjusted to a manual setting. Examples:

- stiff or heavy fabric
- sewing more than two layers of fabric
- type of stitch
- thread



Move the needle thread tension dial off “AUTO” and the computer display screen indicates the suggested manual setting range. Green light disappears.

When adjusting needle thread tension, the higher numbers tighten, the lower numbers loosen.



• Tension is too tight

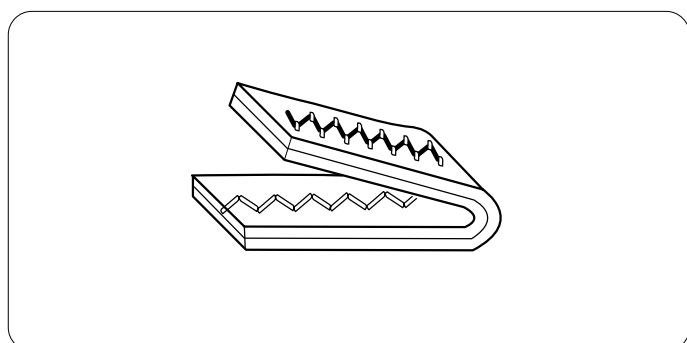
The bobbin thread shows through on the topside of the fabric and it will feel bumpy.

Turn the dial to a lower number to loosen the needle thread tension.

• Tension is too loose

The needle thread shows through on the underside of the fabric and it will feel bumpy.

Turn the dial to a higher number to tighten the needle thread tension.



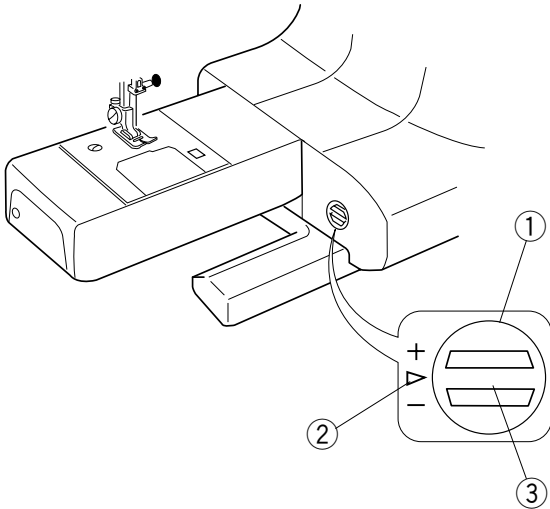
• Adjusting Tension for Zigzag and Satin Stitches

The upper thread tension should be slightly looser when sewing a zigzag or a satin stitch. The upper thread should appear slightly on the underside of the fabric.

Using the Fine Adjustment Screw

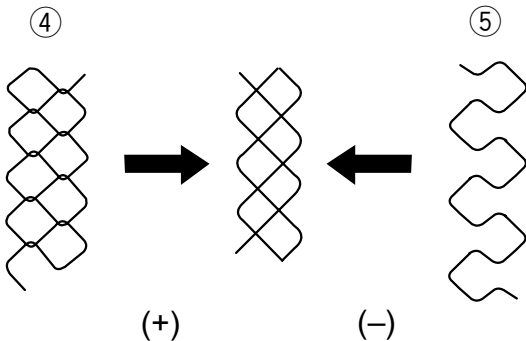
Choice of fabrics and threads may affect the stitch formation. The fine adjustment screw can be used to either lengthen or shorten the stitch.

- ① Fine adjustment screw
- ② Standard mark
- ③ Setting mark

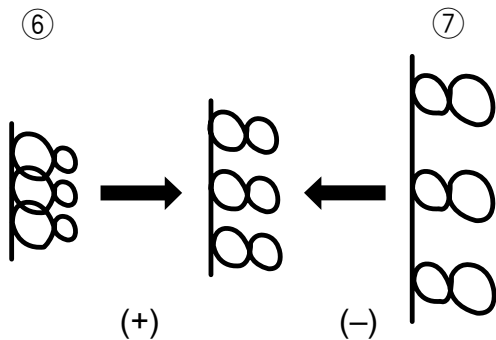


To fine tune, use a screwdriver to move the setting mark.

- If stitches are too short ④, correct by turning the screw in the direction of “+”.
- If stitches are too long ⑤, correct by turning the screw in the direction of “-”.

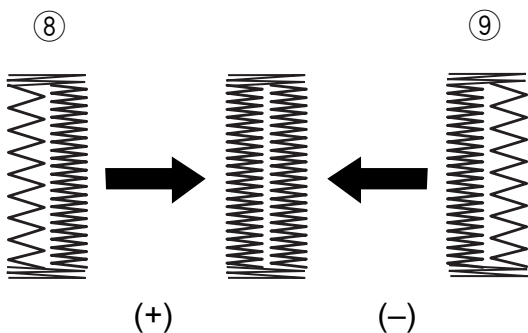


- If letters/numbers are overlapped ⑥, correct by turning the screw in the direction of “+”.
- If letter/numbers are too spread out ⑦, correct by turning the screw in the direction of “-”.



For buttonholes, always make the adjustment according to the left side.

- If left side of buttonhole is less dense (too open) ⑧ compared to right side, correct by turning screw in direction of “+”.
- If left side of buttonhole is more dense (too closed) ⑨ compared to right side, correct by turning screw in direction of “-”.



SECTION II - Getting Ready to Sew

Selecting the Correct Needle and Thread

Weight	Fabric	Needle Type	Needle Size
Very Light	Chiffon, Fine Lace, Organdy	Universal Ball Point	9 (65) 9 (65)
Light	Batiste, Lawn, Crepe de Chine, Challis, Handkerchief Linen, Crepe, Taffeta, Satin	Stretch	11 (75)
		Universal	11 (75) 12 (80)
	Single Knits, Jersey, Swimwear, Tricot	Stretch Ball Point	11 (75) 11 (75)
		Leather	11 (75)
Medium	Flannel, Velour, Velvet, Velveteen, Corduroy, Linen, Gabardine, Wool, Terry, Burlap	Universal	14 (90)
	Double Knits, Stretch Velour, Stretch Terry, Sweater Knits	Ball Point	14 (90)
	Leather, Vinyl, Suede	Leather	14 (90)
Heavy	Denim, Sailcloth, Ticking	Denim	16 (100)
	Coating, Polar Fleece, Drapery, and Upholstery Fabrics	Universal	16 (100)
	Leather, Suede	Leather	16 (100)
Very Heavy	Canvas, Duck, Upholstery Fabrics	Universal	18 (110)
	Topstitching for Special Finish	Topstitching	11 (75) 14 (90)

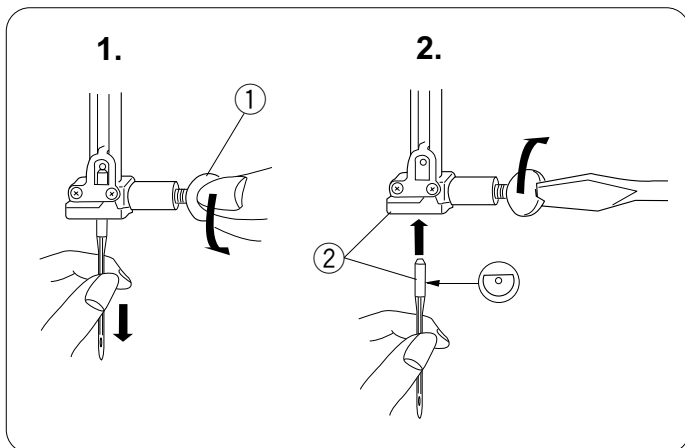
There are many kinds of fabrics, threads and needles. It is important to use the correct ones together.

Always purchase good quality thread. It should be strong, smooth and even in thickness. Use the same thread for needle and bobbin. Always test thread and needle size on a scrap piece of fabric.

In general, fine threads (the larger the number, the finer the thread) and needles (the smaller the number, the finer the needle) are used for sewing lightweight fabrics and heavier threads and larger needles are used for sewing heavyweight fabrics. There are many specialty needles available from your sewing machine dealer.

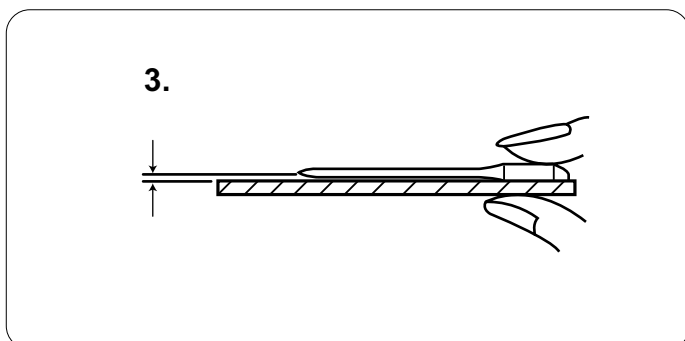
Check your needles frequently for rough or blunt tips. Snags and runs in knits, fine silks and silk-like fabrics are permanent and are often caused by damaged needles.

NOTE: A universal needle size 14/90 comes inserted in your machine.



Changing Needles

1. Turn ON the power switch. Press the "Up/Down Needle" key to raise the needle. Lower the presser foot. Turn OFF the power switch. Turn the needle clamp screw ① counterclockwise to loosen. Remove the needle from the clamp.
2. Insert the new needle into needle clamp ② with the flat side to the back, pushing it up as far as it will go. Tighten the clamp screw firmly.

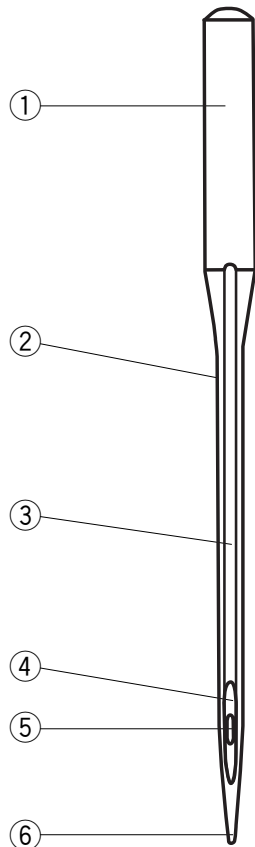


3. To determine if the needle is defective, place the flat side of the needle on something flat (a needle plate, piece of glass, etc.). The gap between the needle and the flat surface should be consistent.

Never use a bent or blunt needle, as it may cause skipped stitches or thread breakage. Defective needles can ruin the fabric. Always purchase good quality needles. Change needles often.

Needle Definitions

The illustration identifies the main parts of a sewing machine needle.



- ① Body
- ② Shaft
- ③ Long groove (round side of needle)
- ④ Short groove (flat side of needle)
- ⑤ Eye
- ⑥ Point

Universal – an all-purpose needle that handles most woven and knit fabrics.

Ball point – the point spreads the fibers, preventing tears and is especially suited for loose knits and interlock knits. Not recommended for embroidery.

Stretch – specially designed to prevent skipped stitches in synthetic suedes and elasticized knits (swimwear).

Denim – the sharp point effectively pierces densely woven fabrics such as denim and canvas.

Topstitching – the extra sharp point penetrates layers of fabrics; extra large eye and large groove accommodate heavyweight topstitching thread.

Metallic – the large grooved shaft helps prevent delicate metallic threads from shredding. Another plus, a larger than average eye makes for easier threading.

Embroidery – a slightly rounded tip minimizes breakage and skipped stitching when using specialty threads like rayon, acrylic or other high-sheen threads during machine embroidery.

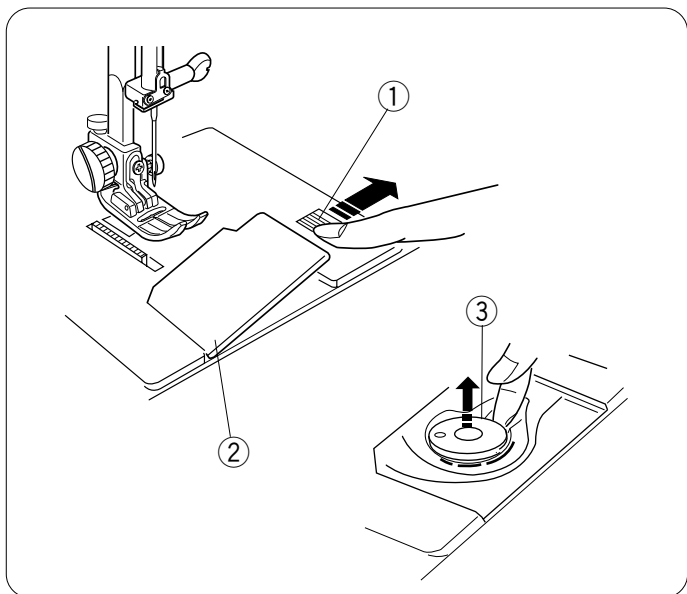
Self-Threading – the needle eye has a slit opening on the side to allow the thread to be easily inserted.

Leather – the cutting point creates small holes in leather and suede. Holes remain after stitching is removed.

Quilt – the tapered point easily penetrates through multiple layers and crossed seams.

Wing/Hemstitch – wide flat edges (wings) extend outwards near the eye; they separate fibers and create holes for beautiful heirloom stitches.

Twin/Double – 2 needles are joined on a crossbar and share a single shaft. Sews two parallel rows of stitching. Available in universal and ballpoint.

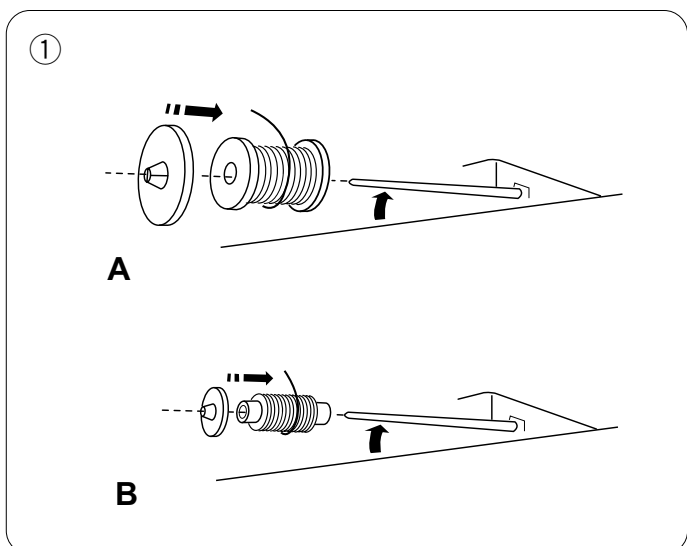


Winding a Bobbin

To remove bobbin, slide bobbin cover plate release button ① to the right and lift away the bobbin cover plate ②.

Lift out the bobbin ③.

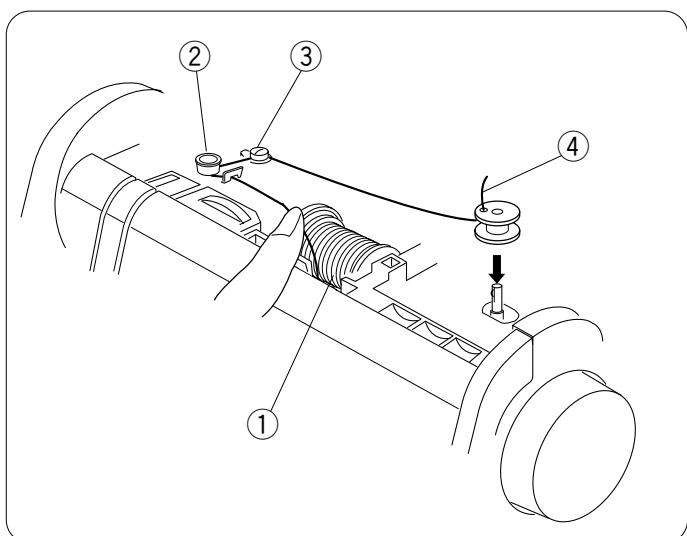
Turn ON the power switch.



① Lift up the spool pin. Place the spool of thread on the spool pin with the thread coming off the spool as shown. Attach the spool holder and press it firmly against the spool of thread.

NOTE: Spool holder needs to be changed according to the type of thread spool

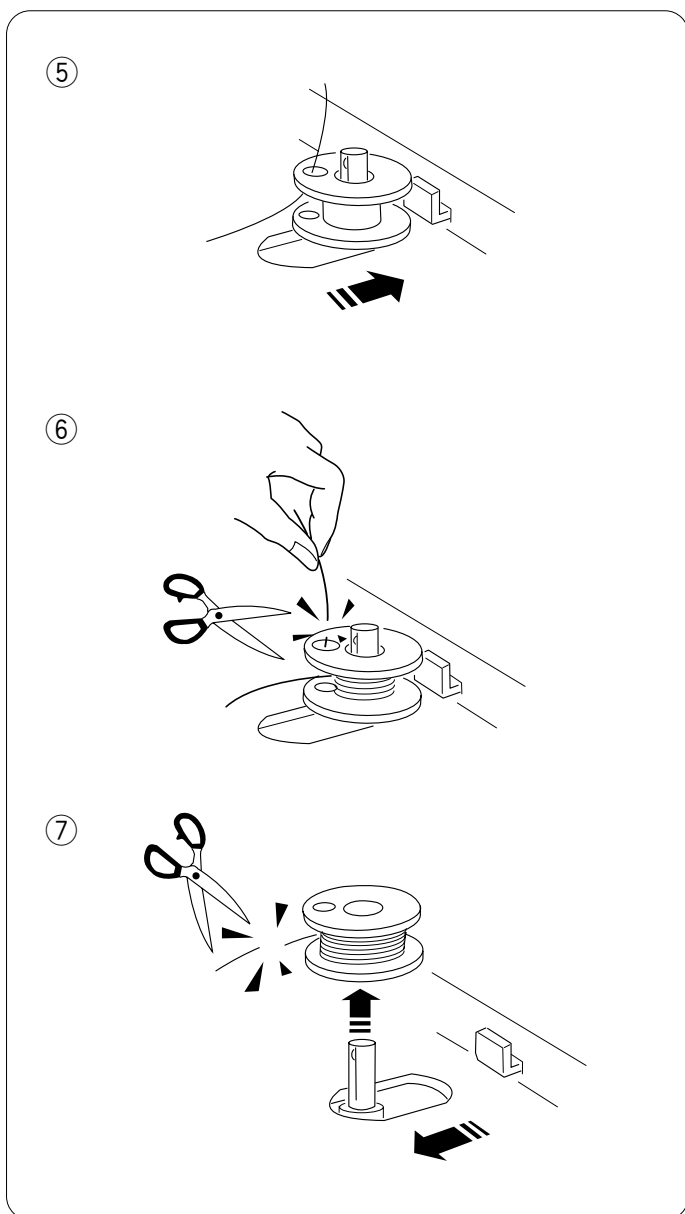
- A. Large spool
- B. Small spool



② Pull the thread towards the thread guides, under the hook and wrap it around the guide as shown.

③ Pull the thread back around the bobbin winder thread guide.

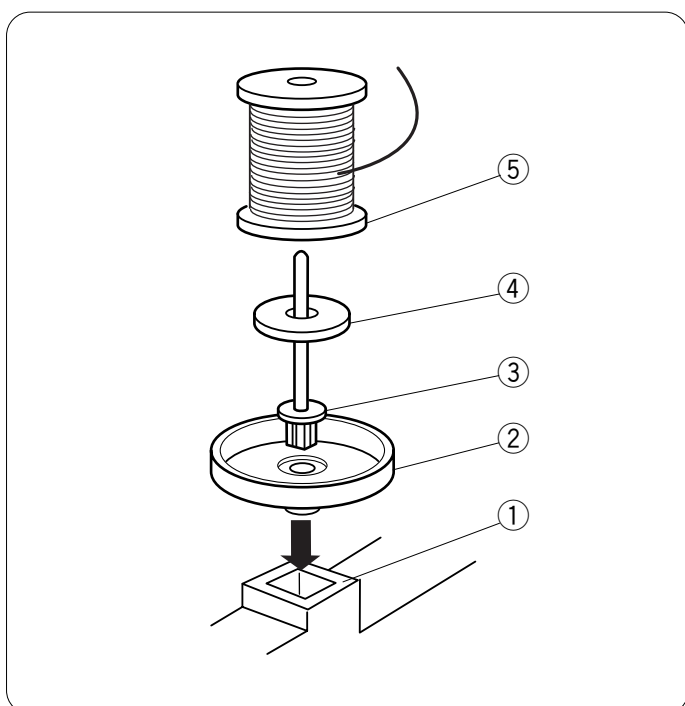
④ Pass the thread through the hole in the bobbin from inside to the outside. Place the bobbin on the bobbin winder spindle.



⑤ Push bobbin winder spindle to the right. The computer display screen will show a bobbin winding message.

⑥ Holding the free end of the thread, press the foot control or Start/Stop key. Stop machine after the bobbin has made a few turns. Cut the thread tail close to the hole in the bobbin. Start machine again to continue winding bobbin. When the bobbin is fully wound, stop the machine.

⑦ Move the spindle to the left to return the bobbin winder to its original position. Cut the thread as shown.



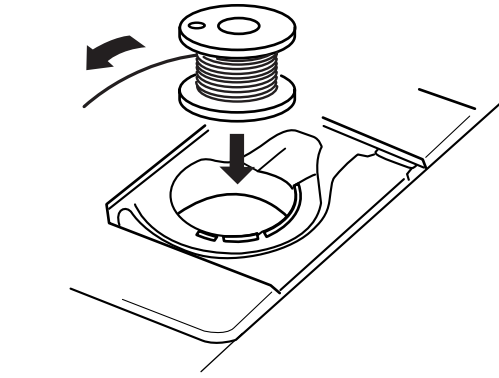
Additional Spool Pin

The additional spool pin can be used to wind an extra bobbin without unthreading the machine.

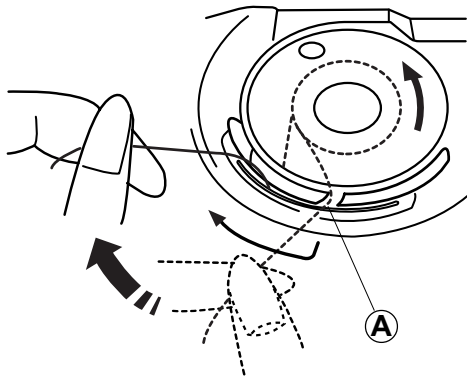
PROCEDURE: Insert the spool stand ② and the additional spool pin ③ in the hole ①. Place the felt ④ and spool ⑤ on the pin with the thread coming off the spool as shown.

Inserting the Bobbin

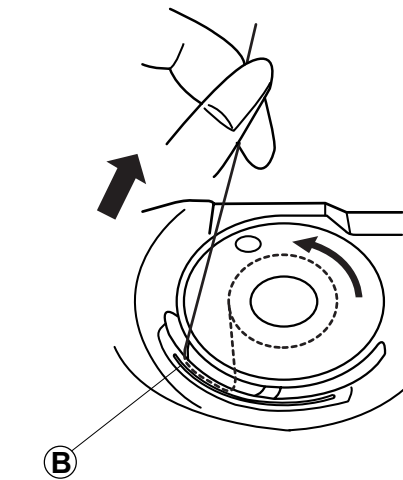
Place the bobbin in the bobbin case with the thread running counterclockwise.



Guide the thread into notch **A** on the front side of the bobbin case.

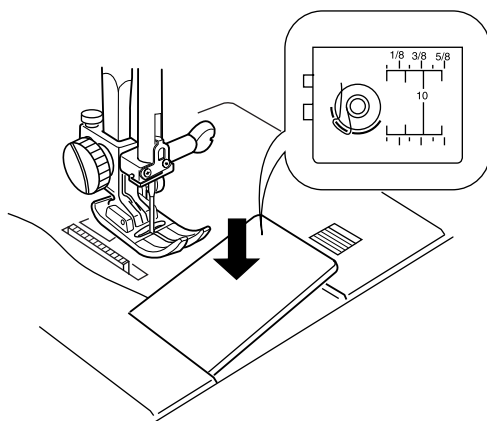


Hold the bobbin with your right hand and pull the thread to the left, through the tension spring blades.



Continue pulling the thread lightly until the thread slips into notch **B**.

Pull out about 15 cm (6") of thread.

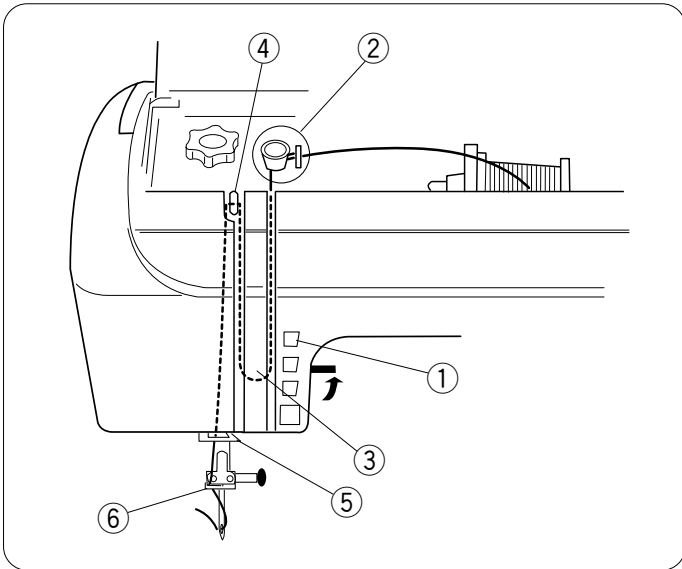


Replace the bobbin cover plate.

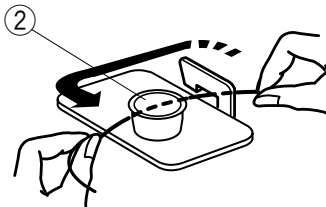
Refer to the chart shown on the bobbin cover plate to check the threading.

Threading the Machine

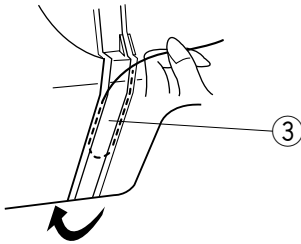
Raise the presser foot. Press the “Up/Down Needle” key ① until the needle is in an up position.



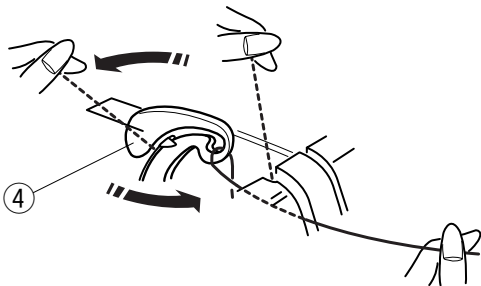
Pull the thread under the hook and around upper thread guide ②.



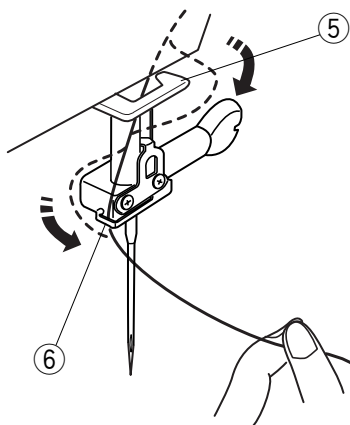
Guide the thread down right channel and around the checkspring holder ③.



Firmly pull the thread from right to left, over the take-up lever and down into the take-up lever eye ④.



Proceed down left channel and through the lower thread guide ⑤.



Slide the thread to the left behind the needle bar thread guide ⑥.

Thread the needle from front to back manually or use the built-in needle threader.

Built-in Needle Threader

Press the “Up/Down Needle” key ① until the needle is in an up position. Turn OFF the power switch. Lower the presser foot.

Lower the needle threader lever ② as far as it will go. Hook ③ is automatically inserted into the needle eye.

Bring the thread around guide ④ and under hook ③.

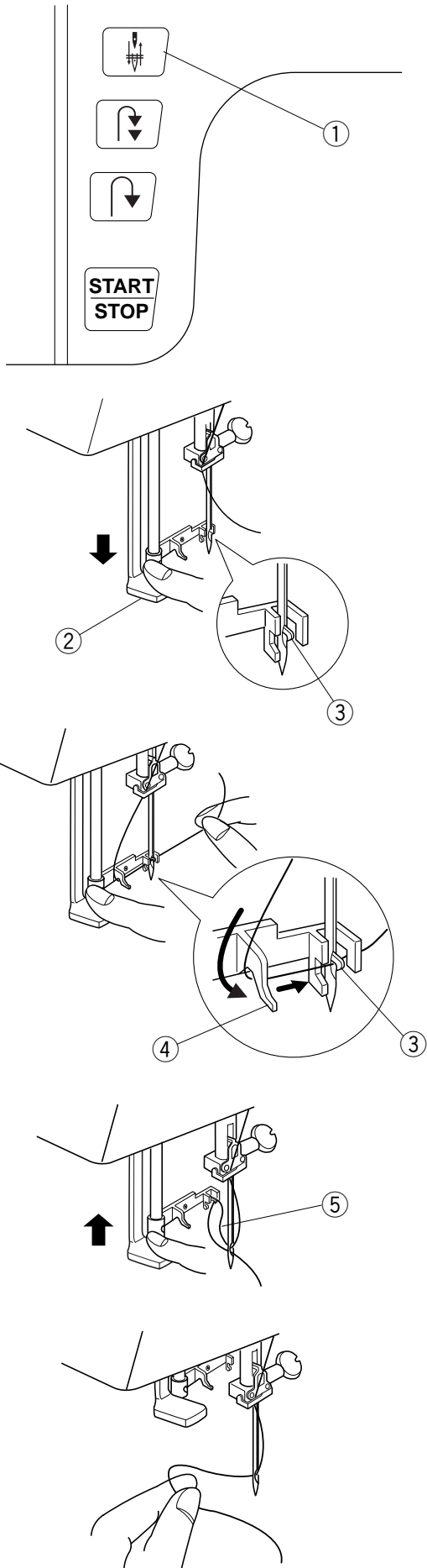
Slowly release the lever while holding the thread end and let the needle threader return to its original position. A loop of thread ⑤ is pulled through the needle eye.

Pull the thread loop off the guide to the back and manually bring the thread through the needle eye.

- The needle threader can be used with #11 to #16 size needles. Thread weight may vary from 30 to 100.

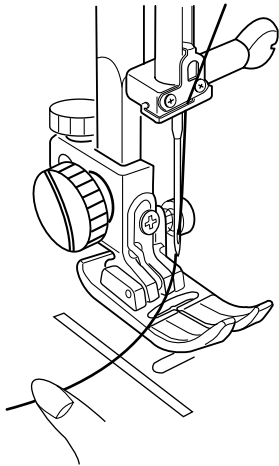
NOTE: Needle threader cannot be used with a twin needle or wing needle.

If the needle threader does not catch a thread loop, check the needle and positioning.

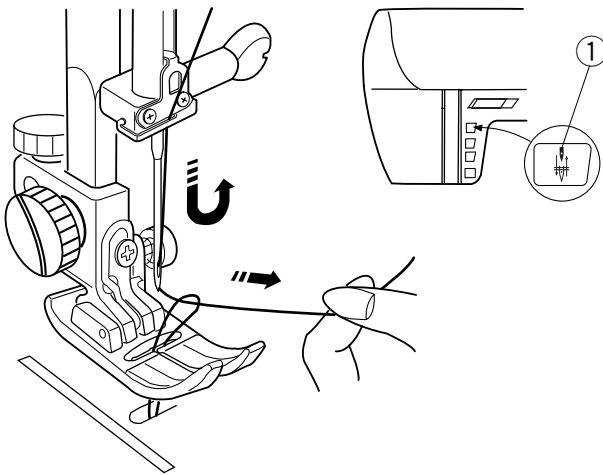


Drawing Up the Bobbin Thread

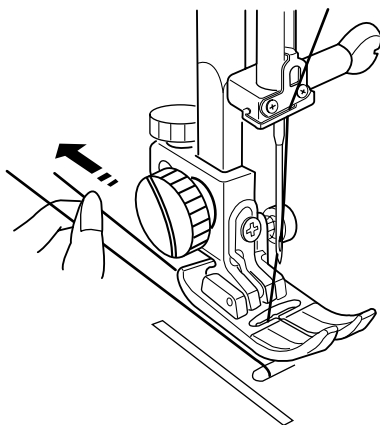
Turn ON the power switch. Raise the presser foot and hold the needle thread lightly with your left hand.



Press the “Up/Down Needle” key ① twice to pick up the bobbin thread.



Draw up the needle thread together with a loop of bobbin thread.



Slide 10 cm (4”) of both threads to the back under the presser foot.

SECTION III - Basic Sewing

How to Select a Stitch

①



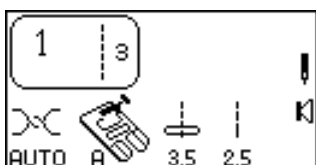
②



① Select stitches 1 - 0 in Direct Mode by touching the corresponding key.

② Select stitches in the 3 Digit Mode by pressing “MODE” key and then the 3 corresponding keys.

Set-up your machine according to the LCD screen.
See page 13.



Straight Stitch

When the machine is turned on, it is automatically set to sew a straight stitch in the center needle position (Exception: Quick Resumption Mode. See page 14).

The straight stitch is used to sew a seam in woven fabrics. The straight stitch can also be used for gathering, basting, sewing in a zipper, pintucks, rolled hems and twin needle hems.

NOTE: Test sew a swatch of fabric and check thread tension. Adjust tension dial if necessary.
See page 18.

Starting To Sew

Raise the presser foot and position the fabric next to a seam allowance line on the needle plate.

Pull the threads under the foot towards the back and lower the presser foot.

Press the foot control or “START/STOP” key. Gently guide the fabric along the seam allowance line letting the fabric feed naturally.

Press the “START/STOP” key or remove foot from foot control to stop sewing.

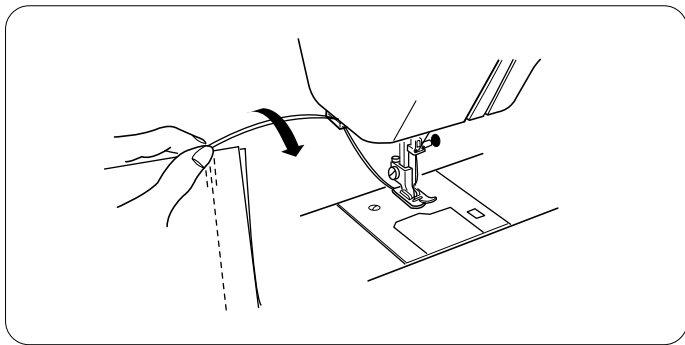
NOTE: Close the side storage compartment before sewing.

Finishing Off a Seam

To fasten the threads at the beginning or end of a seam, press and hold the “Reverse” key ①.

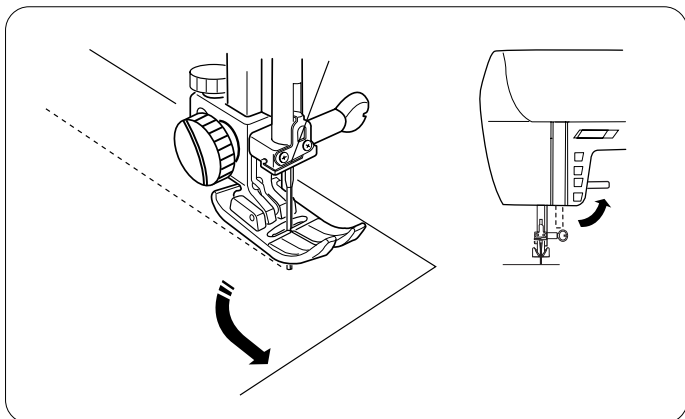
OR

To lockstitch threads at the beginning or end of a seam, press the “Auto-Lock” key ② before sewing begins or when reaching end of sewing.



Cutting the Threads

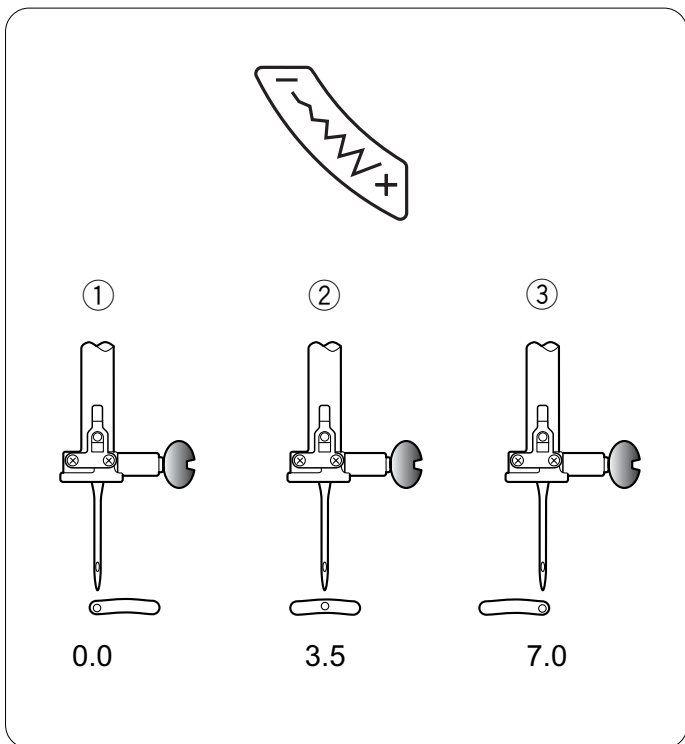
Raise the presser foot. Remove the fabric; pull the threads to the back and cut threads using the thread cutter. (The threads are cut the proper length to start the next seam.)



Changing Sewing Direction

Stop the machine and press the “Up/Down Needle” key to bring the needle down into the fabric. Raise the presser foot using either the presser foot lever or knee lifter.

Pivot the fabric around the needle to change sewing direction. Lower the presser foot. Press the “Up/Down Needle” key to bring the needle up. Sew in new direction.



Adjusting Needle Position

When you press the “Stitch Width/Needle Position” key, the needle position can be set between 0.0 and 7.0.

Press the top/left “-” side of the key to move needle to left.

Press the bottom/right “+” side of the key to move needle to right.

- ① Left position
- ② Center position
- ③ Right position

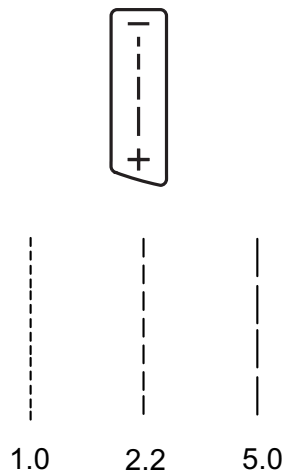
The following stitches also have variable needle position: 6, 031 and 078.

Adjusting Stitch Length

When you press the “*Stitch Length*” key, the stitch length can be set at 0.00 or between 1.0 and 5.0.

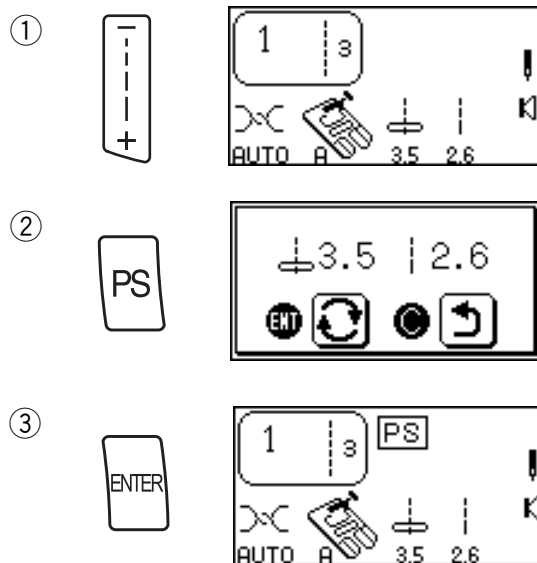
Press the top “–” side of the key to shorten the stitch length.

Press the bottom “+” side of the key to lengthen the stitch length.



Programming My Personal Settings

All stitches in the Direct Select Mode (1 to 0) can be programmed to override the factory default settings.



① Change stitch length to 2.6.

② Press “*My Personal Setting*” key. Message Screen Appears.

③ Press “*ENTER*” key to save personal setting. PS symbol appears in LCD screen to indicate stitch has been altered from factory default settings.

Reset Stitch To Factory Default Settings.

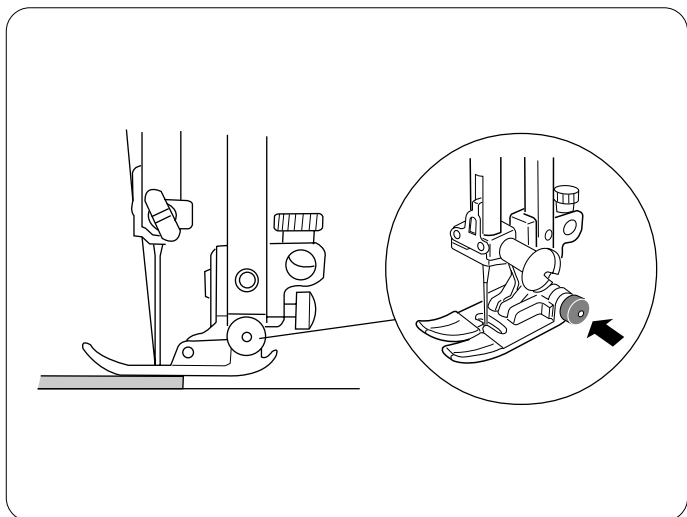
It is possible to reset the machine so personal settings for an individual stitch revert to the factory default settings.

- ① Display the stitch you want to reset in the LCD screen.
- ② Press “My Personal Setting” key. Message screen appears.
- ③ Press “C” key. PS symbol disappears and factory default settings are displayed.

Reset All Stitches To Factory Default Settings.

It is possible to reset the machine so all personal settings for stitches 1-0 revert to the factory default settings.

- ① Turn OFF the power switch. Press “ENTER” key while turning power switch ON. Message screen appears.
- ② Press “9” key. Message screen appears.
- ③ Press “ENTER” key to confirm and reset to factory default.
OR
Turn off power switch to cancel the reset and retain personal settings.

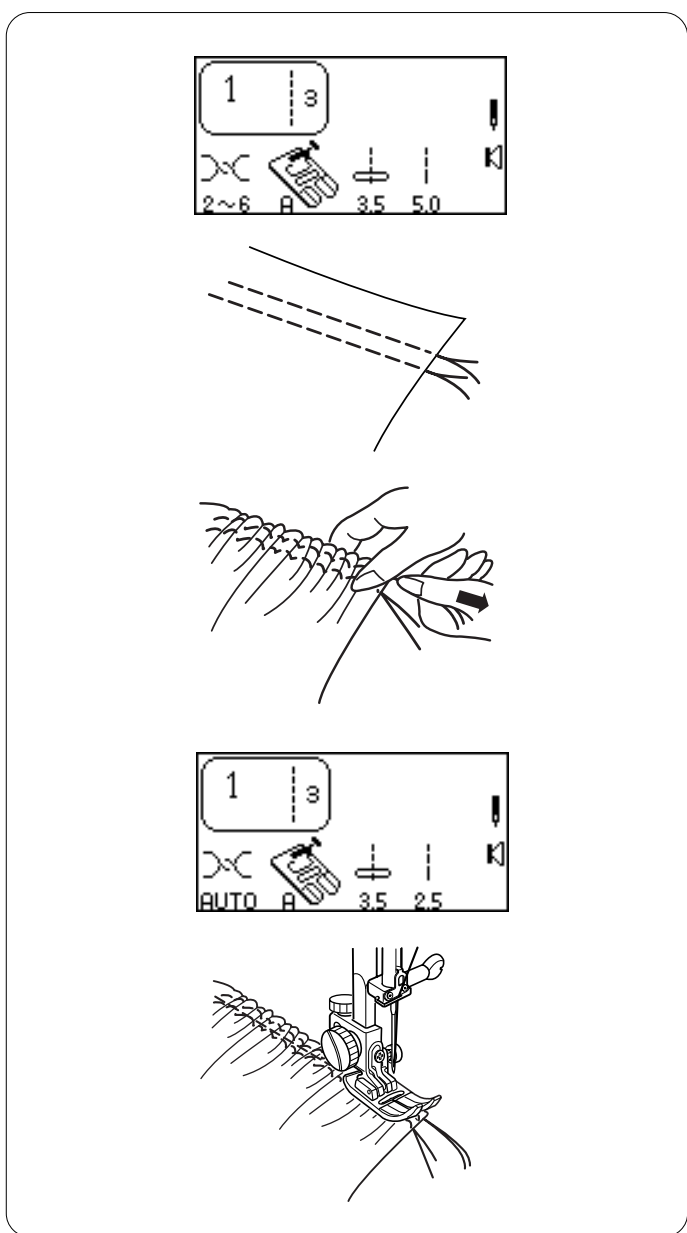


Sewing On Heavy Fabrics

The black button on presser foot “A” locks the foot in a horizontal position when pushed in before lowering the presser foot. This ensures even feeding at the beginning of seams and helps when sewing many layers of fabric such as welt seams used to hem jeans.

When the point of an increased thickness is reached, lower the needle and raise the presser foot. Press in the black button. Lower the foot and continue sewing. This button releases automatically after a few stitches have been sewn.

NOTE: Increase stitch length between 3.0 and 4.0 for heavier fabrics.



Gathering

Gathering/shirring evenly distributes fullness in an area with very tiny pleats. Gathering is one row or two parallel rows. Shirring is three or more parallel rows. Light to medium weight fabrics provide the best results.

Decrease thread tension dial to between 1 and 3. Increase stitch length to 5.0.

Sew two rows of parallel stitches. Sew first row next to raw edge using foot edge as guide. Sew second row next to first row using foot edge as guide. Leave long thread tails at beginning and end of each row.

Pull the bobbin threads simultaneously from each end of the fabric until the desired amount is gathered. Knot the threads at each end and distribute the gathers evenly.

Reset thread tension dial to “AUTO” and decrease stitch length to 2.5.

Sew between two rows of stitching to secure gathering.

OR

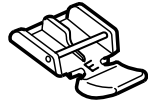
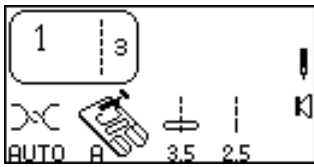
Lay gather fabric over flat fabric and sew the two fabrics together directly on the second row of gathering stitches.

Zipper Insertion

Lapped Application

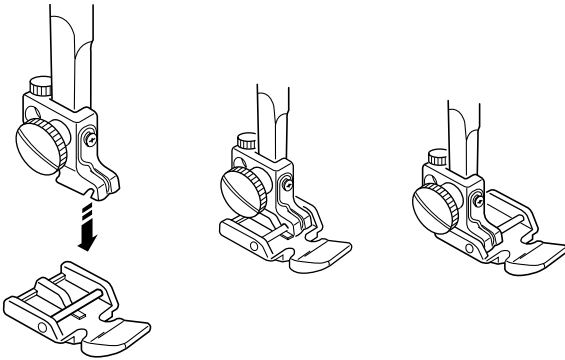
Lapped zippers are usually inserted into a side seam of skirts or pants, for example.

Use zipper foot E instead of standard metal foot A.



Attach the pin on zipper foot E to the groove on the shank.

- To sew the left side of the zipper, attach the zipper foot on the right-hand side.
- To sew the right side of the zipper, attach the zipper foot on the left-hand side.

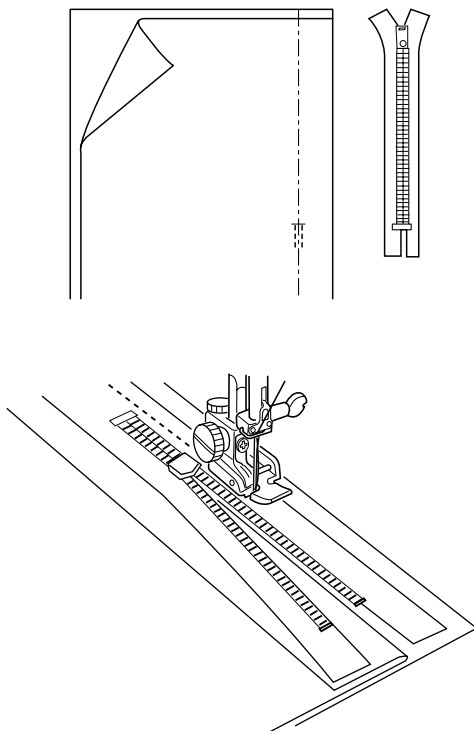


Fabric Preparation

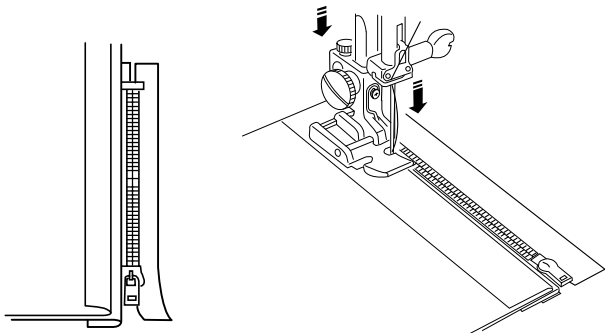
Add 1 cm (3/8") to the zipper size. Use this measurement and mark the opening for the zipper.

Place right sides of fabric together and sew the seam located below zipper placement. (Make sure to reverse sew the stitches directly below the zipper placement.)

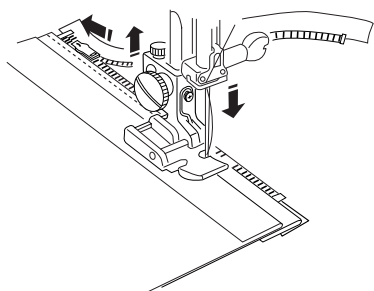
Increase stitch length to 5.0 and baste the zipper opening closed. Press the seam and basting seam open.



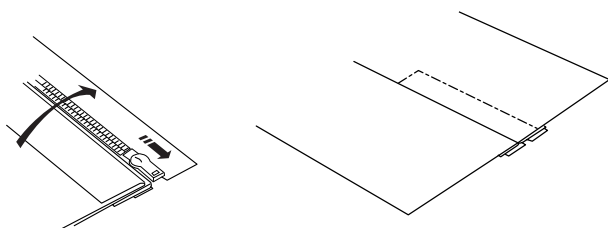
Open zipper and place it face down on the seam allowance. Teeth are on the seam line and zipper top is 1 cm (3/8") from fabric top edge. Attach foot with left side pin. Baste zipper in place, sewing from bottom to top.



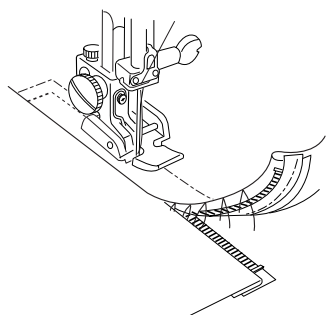
Close zipper. Turn zipper face up (right seam allowance forms a small fold at basting line) and smooth zipper teeth away from seam. Attach foot with right side pin. Reset straight stitch length to 2.5. Starting at the bottom, sew through the folded seam allowance and zipper tape.



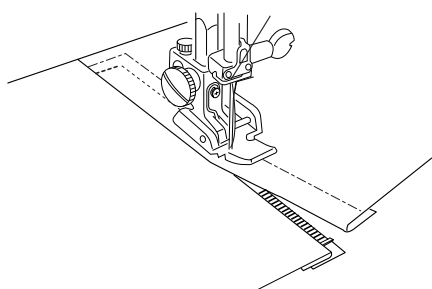
Stop just before the zipper foot reaches the slider on the zipper tape. Lower the needle slightly into the fabric. Raise the zipper foot and open the zipper. Lower the foot and stitch the remainder of the seam.



Close the zipper and spread the fabric flat with the right side facing up. Baste through the opened seam allowance and zipper tape.



Move the zipper foot to the left side pin. Guide the edge of foot along the zipper teeth and stitch through the garment and zipper tape. Stop about 5 cm (2") from the top of the zipper. Slightly lower the needle into the fabric. Raise the foot, remove the basting stitches from seam line and open the zipper.



Lower the foot and stitch the remainder of the seam, making sure the fold is even.

Remove remaining basting stitches.

Rolled Hem

An easy, professional way to sew hems. The spiral on the hemmer foot guides the fabric edge to create a rolled hem. Recommended for fine, sheer fabrics used in bridal wear.

Attach hemmer foot D.

Trim about 6.5 mm (1/4") from corners to reduce bulk.

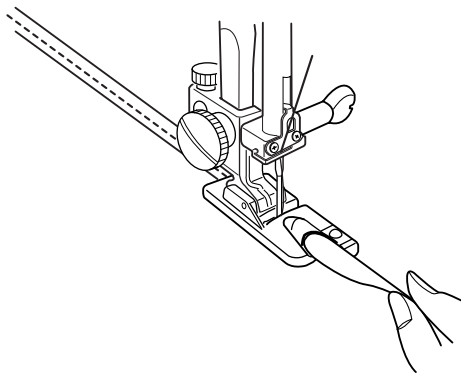
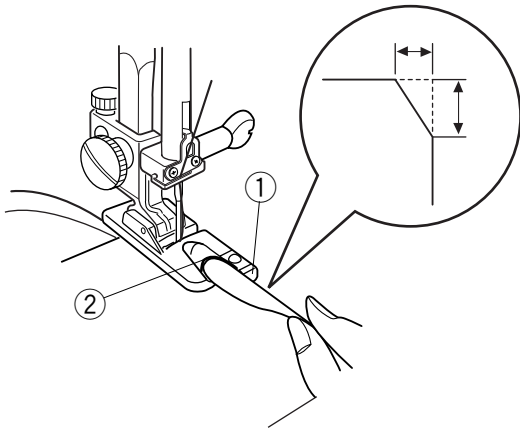
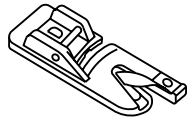
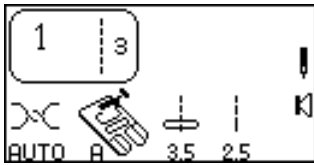
Make a double 3 mm (1/8") fold approximately 8 cm (3") in length.

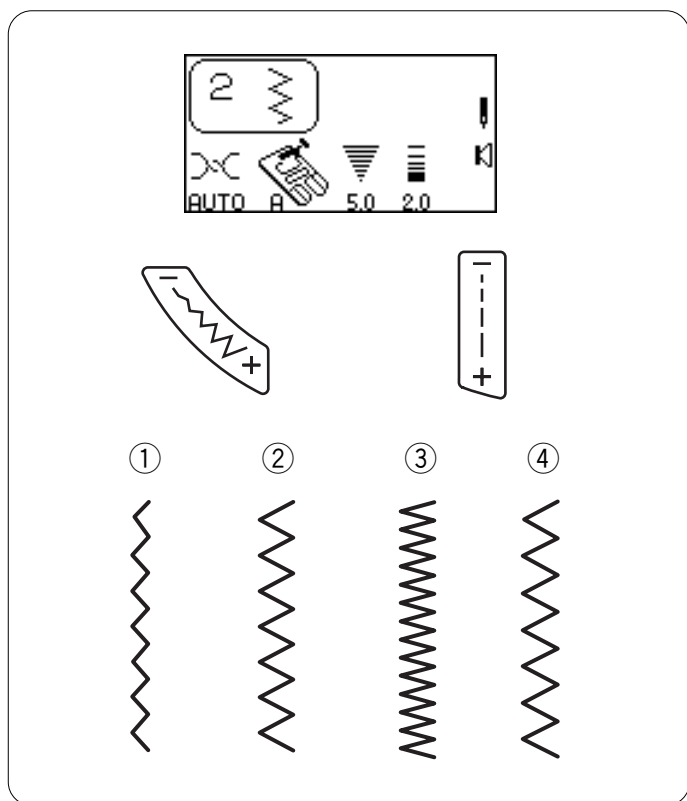
Align fabric hem edge with the inside of right extension of foot ①. Use this placement on foot as guide. Lower presser foot. Sew 3 or 4 stitches while holding needle and bobbin threads. Stop sewing.

Lower needle into fabric and raise presser foot. Insert folded portion of fabric into spiral of foot ②.

Lower presser foot and sew; lift up edge of fabric to keep it feeding smoothly.

NOTE: Use zigzag with stitch width 1.0 – 2.0 for variation.





Zigzag Stitch

The zigzag stitch is a very versatile stitch. Simply change its width and length. Use the zigzag to finish raw seam edges, sew narrow hems, sew satin stitch appliques and create beautiful monograms.

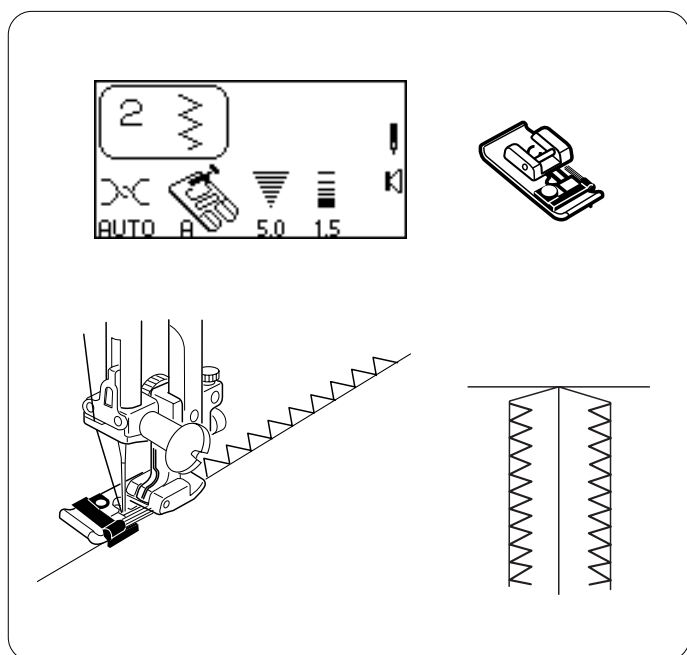
Select 2.

Adjusting Stitch Width and Length

Press the “-” or “+” side of the keys to change the stitch width and length.

- ① Narrower width (lower number)
- ② Wider width (higher number)
- ③ Shorter stitch (lower number)
- ④ Longer stitch (higher number)

NOTE: Settings can be altered during sewing.



Overcasting

Simple zigzag stitching is used for finishing raw seam edges (overcasting) on most woven fabrics to prevent fabric from unraveling. This is the fastest way to finish an edge.

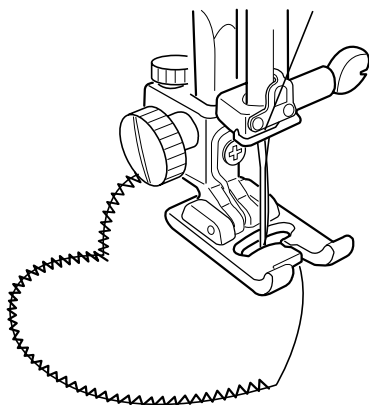
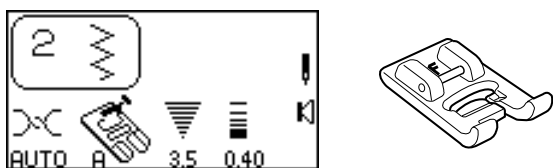
Select 2.

Decrease stitch length to 1.5.

Attach overlock foot C.

- *Do not set the stitch width lower than 5.0 when using overlock foot C because the needle could hit wires on the foot.*

Place the fabric edge against the black guide on the foot. Sew.



Satin Stitch Appliqué

The zigzag stitch is commonly used for appliqué, monogramming, stems of flowers and petals. (A short zigzag stitch length creates the satin stitch.) Threads of 100% cotton, rayon or silk provide the best results.

- Apply stabilizer to the fabric for the stitch to form correctly.

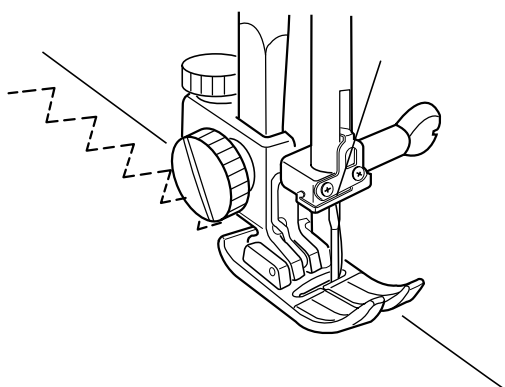
Select 2.

Attach satin stitch foot F.

Decrease stitch width to 3.5 and stitch length to 0.40.

Appliqué Preparation

1. Press fusible webbing to the wrong side of a lightweight fabric.
2. Cut out design shape. Fuse design to main fabric.
3. Sew design to fabric with the needle swinging off the appliqué.
4. When you reach a place where you need to turn, lower the needle into the fabric at the outer edge of the turn. Raise the presser foot, turn fabric, lower the presser foot and continue sewing. *You may need to set the foot pressure dial to 2.*

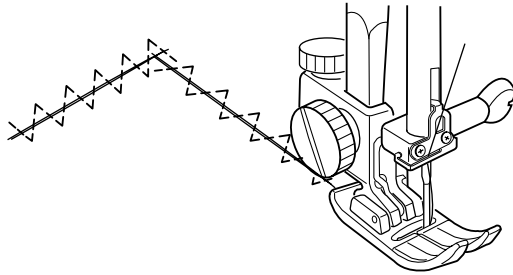
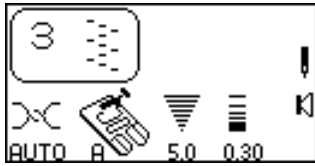


3-Step Zigzag

The 3-step zigzag (sometimes called a multiple zigzag) is used to finish raw seam edges on synthetics and other fabrics that tend to pucker. This stitch gives a flatter edge finish than the regular zigzag and is excellent for darning and mending tears in fabric.

Select 3.

Place the fabric under the presser foot so the needle swings off the fabric to the right or trim away any excess fabric.

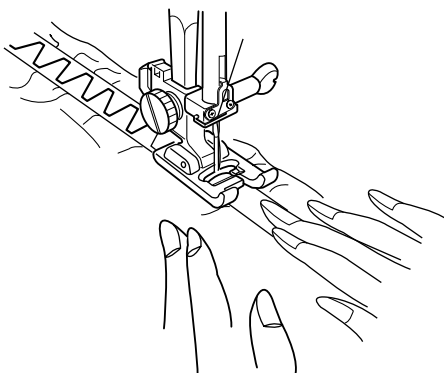
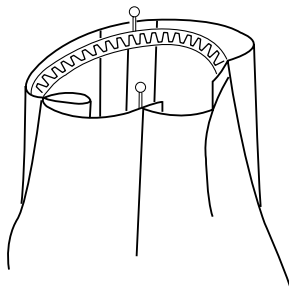
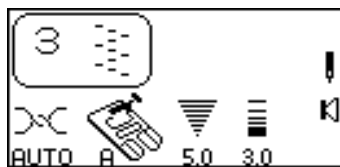


Mending a Tear

Pull torn edges together and fuse a piece of interfacing slightly larger than the tear to the wrong side of the garment.

Decrease stitch length to 0.20 – 0.50.

Begin sewing above the tear. Stitch down the middle, pulling edges together. Stop sewing just beyond end of tear. Depending on the tear, you might need to stitch area 2 or 3 times.



Apply 7 mm (1/4") Elastic

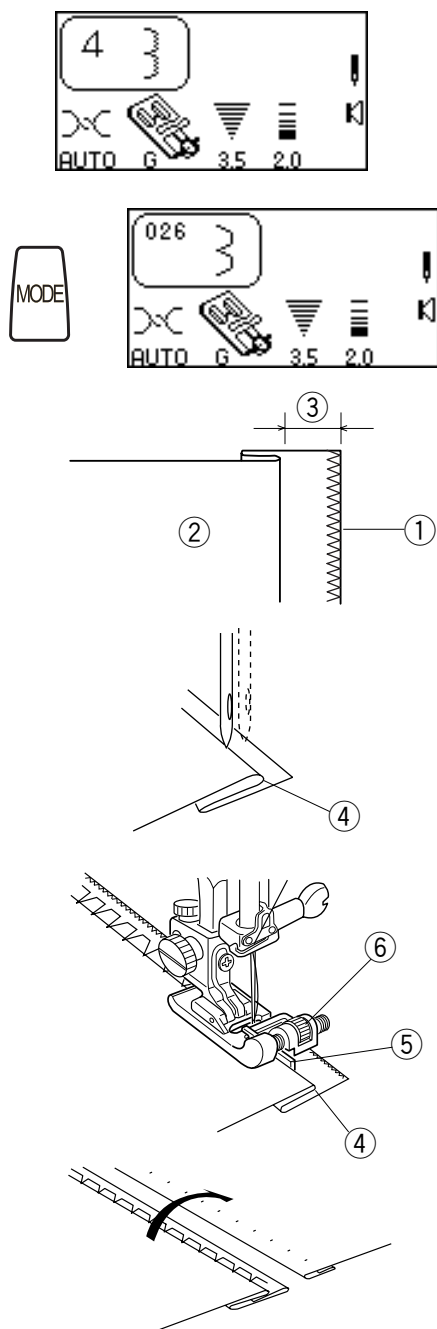
Attach satin stitch foot F.

Increase stitch length to 2.5 or higher.

1. Mark elastic and fabric into equal parts.
2. Match marks on elastic to fabric.

3. Place middle of elastic under center of presser foot and stitch into place, making sure elastic is evenly stretched.

NOTE: Apply Elastic with Elastic Gatherer (optional accessory). The elastic gatherer evenly stretches the elastic as it is sewn to the fabric. Available in 3 sizes - 7.5 mm, 10 mm or 13 mm (1/4", 3/8" or 1/2").



Blind Hem Stitches

The stretch blind hem (4) is a great method for finishing a hemline or sleeve.

Use the woven blind hem (026) on non-stretch fabrics. Finish the raw hem edge with a zigzag or 3 step zigzag ① before sewing the blind hem.

Select 4 or press “MODE” key and select 026.

Fold up the hem allowance and press. Fold under the hem toward right side of garment. Leave a 6.5-10 mm (1/4” to 3/8”) extension ③ at the right.

② Wrong side of fabric.

Position the fabric (wrong side up) so the folded edge ④ is to the left side of the guide ⑤. Lower the presser foot. Hand turn the flywheel and check that wide zigzag catches only one or two fibers of the fold. The straight stitch (or narrow zigzag) will be sewn on the single fabric layer.

If the guide needs adjustment: raise needle out of fabric, lift presser foot, turn the adjustment nut ⑥ and move the guide to the right or left. Reposition fabric against guide, check needle swing by turning flywheel, lower presser foot and sew hemline.

Unfold and open fabric with right side facing up. Stitches should be almost invisible.

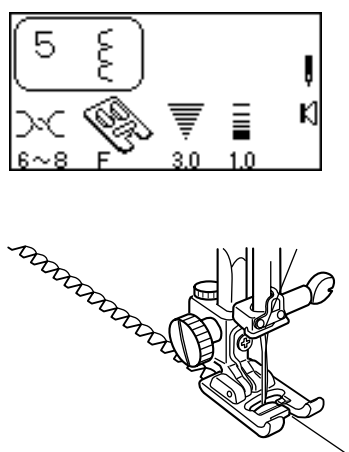
NOTE: If the needle catches too much of the fold, the stitches will show on the right side.

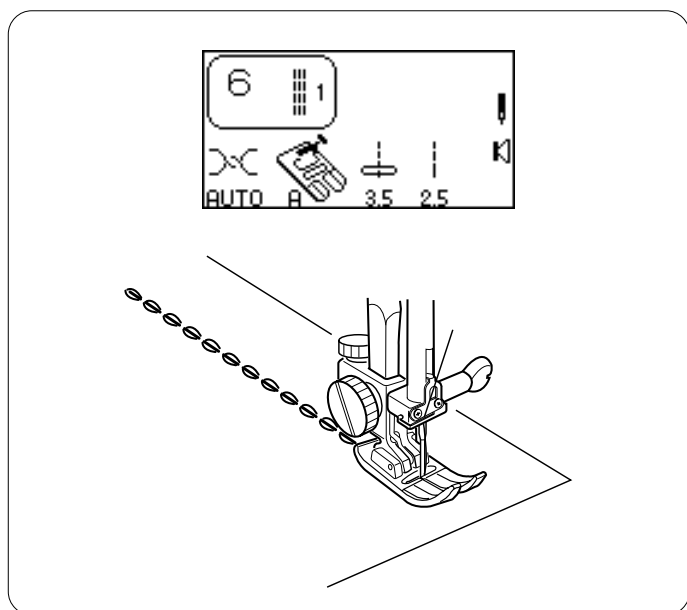
Lingerie Stitch

Sew a fine seam in lingerie and lightweight knits. The small seam size stretches and is comfortable to wear.

Select 5.

Place fabric edges so needle just clears edge when it swings off the fabric to the right.





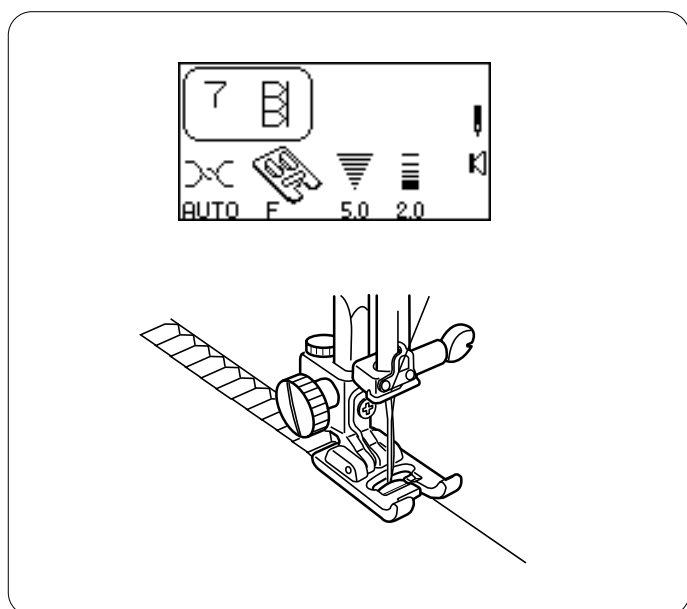
Triple Seam

This strong, durable stitch is recommended where both elasticity and strength are needed. Because of its durability, once in place, this stitch is not easily removed. Use it to reinforce areas such as crotch and armhole seams or to construct items such as backpacks. This stitch can also be used for topstitching.

Elna invented this stitch in 1952.

Select 6.

Using a straight stitch (stitch length 4.0), baste a seam together. Verify the fit. Reset the machine for triple seam and sew.



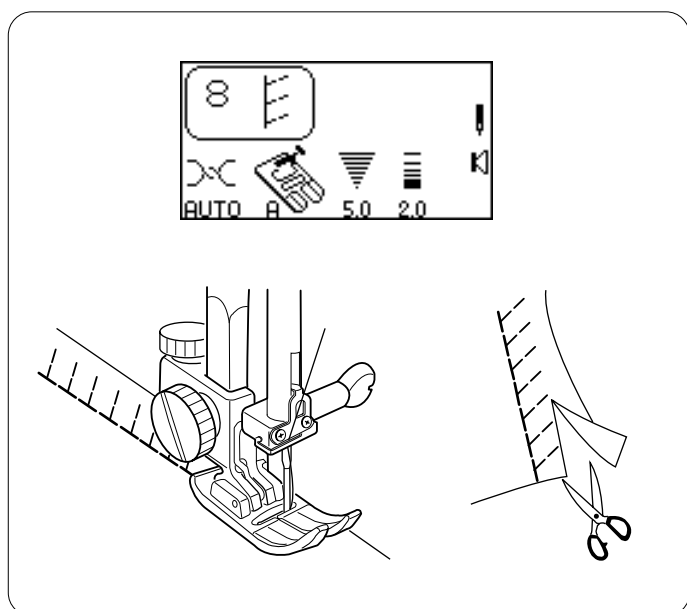
Super Overlock Stitch

This industrial inspired overlock stitch is excellent for assembling and finishing fabrics together in one step. Apply ribbing to knits and garment retains its shape.

Elna invented this stitch in 1982.

Select 7.

Place the fabric edges together under the presser foot next to the right side edge of the presser foot.



Super Stretch Stitch

This stitch is recommended for sewing fabrics such as swimwear and stretch velour as it provides great stretchability and strength. Seams lie flat and do not lose their shape. Foot pressure may need to be changed to 2 for fabric to maintain its shape.

Select 8.

Place the fabric edges together under the presser foot. Trim away any excess seam allowance.

Buttonhole Variations

All buttonholes should use interfacing that is the same weight as the fabric. Interfacing is especially important when sewing on stretch fabrics.

Classic Buttonhole (Sensor or 4 Step Memory)

The most common buttonhole, found on blouses, shirts, pants, etc. It consists of a bartack at each end and a compact zigzag stitch along each side.

9 or 019



Classic Keyhole Buttonhole

Accommodates the shank found on large buttons used on heavy coats and jackets.

0



Rounded Keyhole Buttonhole

A variation of the classic keyhole.

011



Jeans Buttonhole

Traditionally found on ready to wear jeans and other denim garments.

012



Rounded Buttonhole

Use this buttonhole for large buttons on lightweight fabric.

013



Stretch Buttonhole

Designed for non-woven fabrics such as knit and jersey. It provides a decorative touch.

014



Knit Buttonhole

A simplified version of the stretch buttonhole.

015



Heirloom Buttonhole

An ultra fine buttonhole featuring a preset stitch width and length to complement delicate fabrics. The bartacks at each end contain half the stitch count when compared to the classic buttonhole.

016



Faux Chain Buttonhole

Resembles a “Hand Worked” buttonhole ideal on fine fabrics featured in Heirloom sewing or for couture fashions.

017



Bound Buttonhole (Sensor or 4 Step Memory)

Made through the garment and interfacing before the facing is applied, resulting in finished fabric edges, a custom tailored touch. Often found on garments made from natural fibers

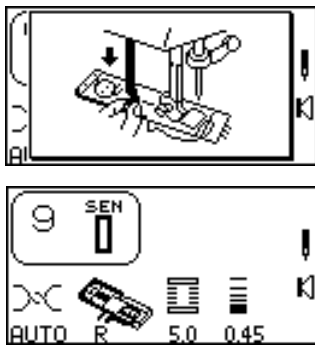
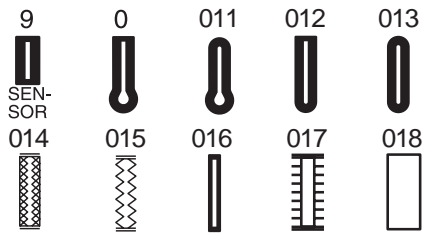
018 or 020



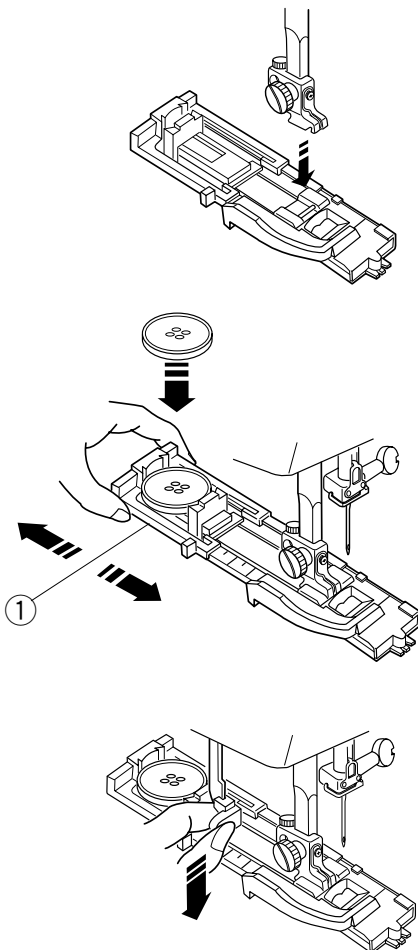
Test sew the buttonhole on a sample swatch of the same fabric. Include the interfacing and any seam allowances that will be in the actual garment. This is very important to ensure the buttonhole style and fabric are compatible.

Sensor Buttonholes (Totally Automated Buttonholes)

Select a buttonhole style - 9 through 018.



The LCD screen will briefly show an illustration advising that the buttonhole lever be lowered. Alter the buttonhole width to match the fabric and thread. See page 46.

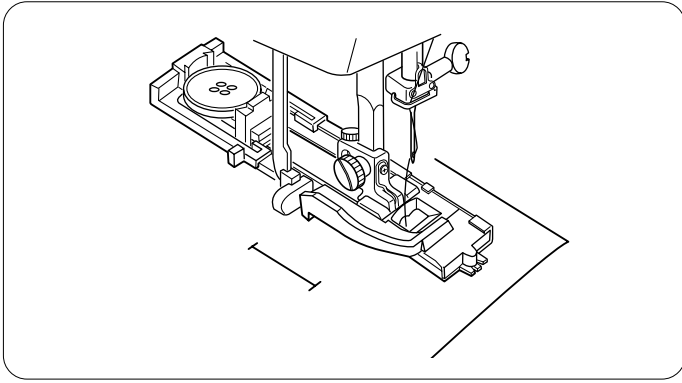


When attaching buttonhole foot (R), make sure the button opening is at the back of the foot.

Extend the buttonholder ① to the back and place the button in it. Push the holder together tightly around the button.

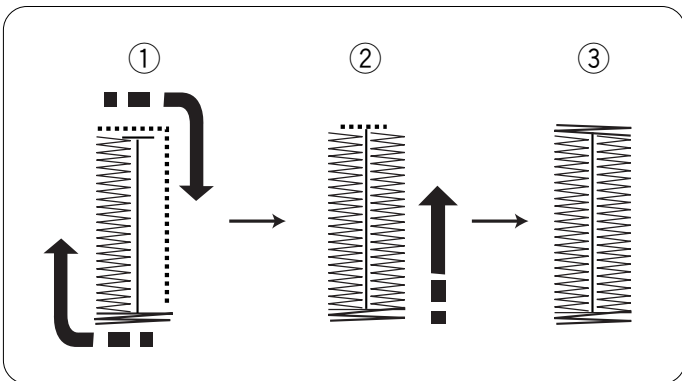
Placing the button in the automatic buttonhole foot (R) automatically sets the size of the buttonhole. The buttonholder adjusts for buttons with a diameter between 0.5 cm (3/16") and 2.5 cm (1"). If your button is larger than 2.5 cm (1"), see page 48.

Pull the buttonhole lever down as far as it will go.



Mark the buttonhole area on the fabric. Place **both threads** to the left **under** the foot. Insert the garment under the foot and hand turn the flywheel to lower the needle at the starting point. Then lower the buttonhole foot.

Begin sewing. While sewing a buttonhole, the LCD screen shows which portion is currently being sewn.



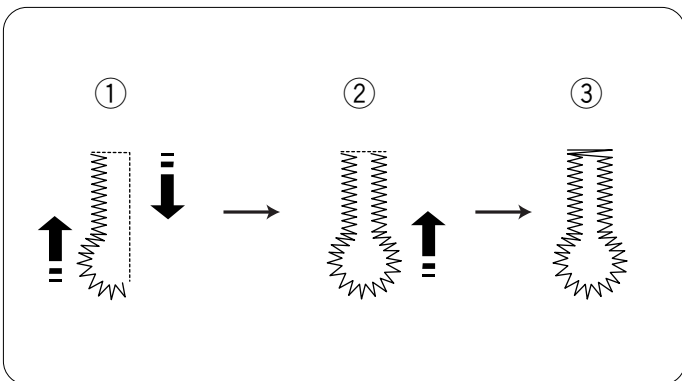
9 Classic Buttonhole (Sensor)

The buttonhole will automatically sew:

- ① the front bartack, zigzag backwards on left side and straight stitch forward on right side to front bartack
- ② zigzag backwards on right side
- ③ back bartack and stop

Variation – Reinforced Buttonhole

Suitable for heavyweight fabric. When Classic Buttonhole sewing is complete, do not lift up presser foot. Simply begin sewing again and sew over first buttonhole.



0 Classic Keyhole Buttonhole

The buttonhole will automatically sew:

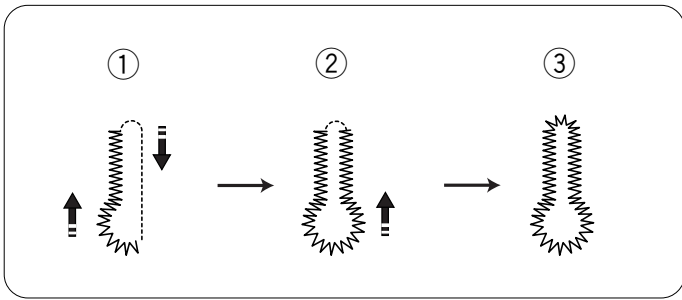
- ① the front left half of keyhole, zigzag backwards on left side and straight stitch on right side to front
- ② front right half of keyhole and zigzag backwards on right side
- ③ back bartack and stop

Press **"MODE"** key to access 3 Digit Mode for Buttonholes 011 - 018.

011 Rounded Keyhole Buttonhole

The buttonhole will automatically sew:

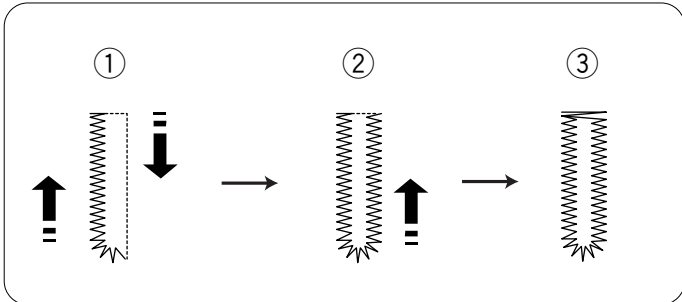
- ① the front left half of keyhole, zigzag backwards on left side and straight stitch on right side to front
- ② front right half of keyhole and zigzag backwards on right side
- ③ back rounded end and stop



012 Jeans Buttonhole

The buttonhole will automatically sew:

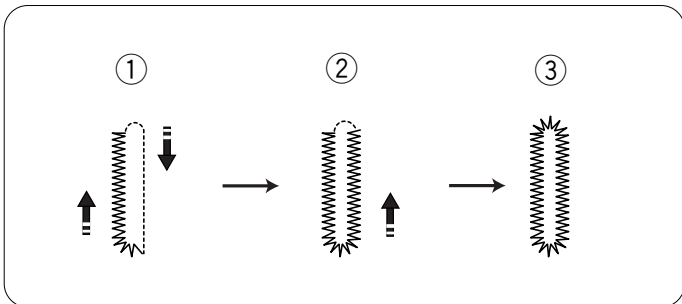
- ① the front left half of rounded end, zigzag backwards on left side and straight stitch on right side to front
- ② front right half of rounded end and zigzag backward on right side
- ③ back bartack and stop



013 Rounded Buttonhole

The buttonhole will automatically sew:

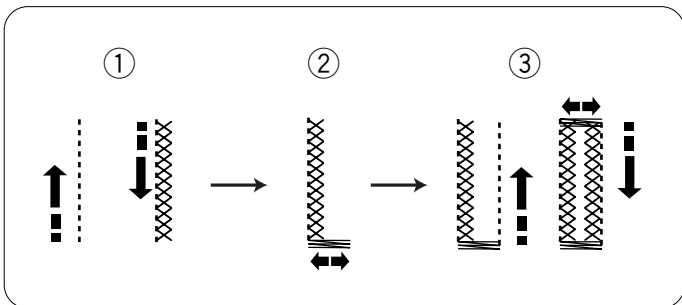
- ① the front left half, zigzag backwards on left side and straight stitch on right side to front
- ② front right half and zigzag backward on right side
- ③ back rounded end and stop



014 Stretch Buttonhole

The buttonhole will automatically sew:

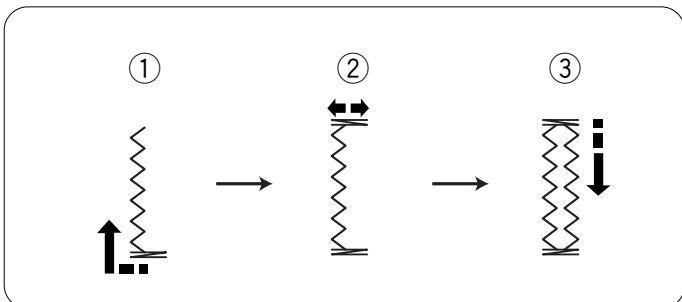
- ① straight stitch on left side backwards and cross stitch forward on left side
- ② front bartack
- ③ straight stitch on right side backwards, back bartack, cross stitch forward on right side and stop

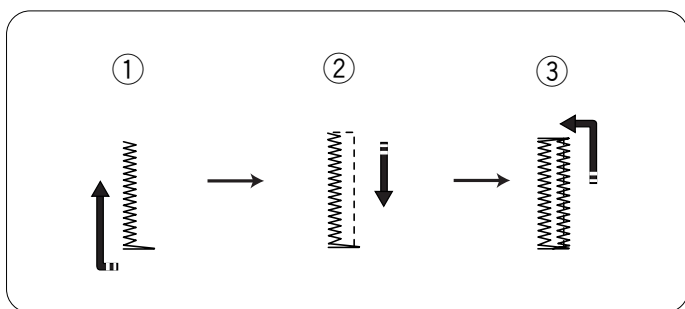


015 Knit Buttonhole

The buttonhole will automatically sew:

- ① front bartack and triple zigzag backwards on left side
- ② back bartack
- ③ triple zigzag forward on right side and stop

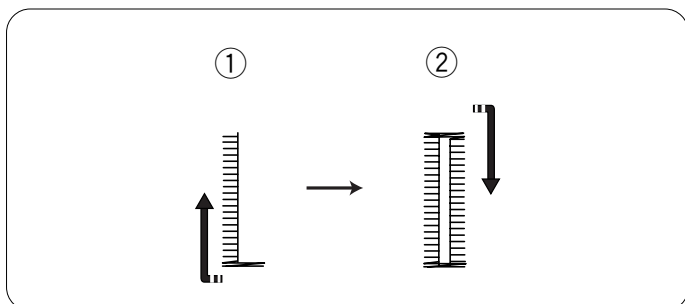




016 Heirloom Buttonhole

The buttonhole will automatically sew:

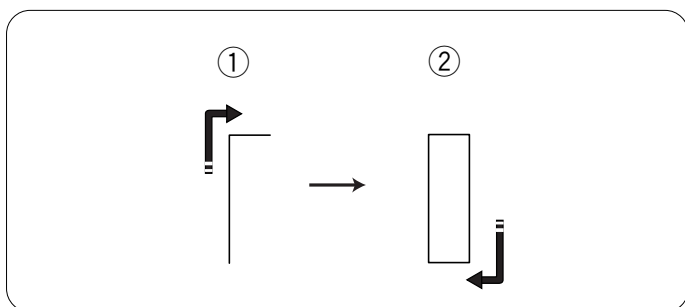
- ① the front bartack, zigzag backwards on left side
- ② straight stitch forward on right side to front bartack and zigzag backwards on right side
- ③ back bartack and stop



017 Faux Chain Buttonhole

The buttonhole will automatically sew:

- ① the front bartack, and stitch backwards on left side
- ② back bartack, stitch forward on right side to front bartack and stop



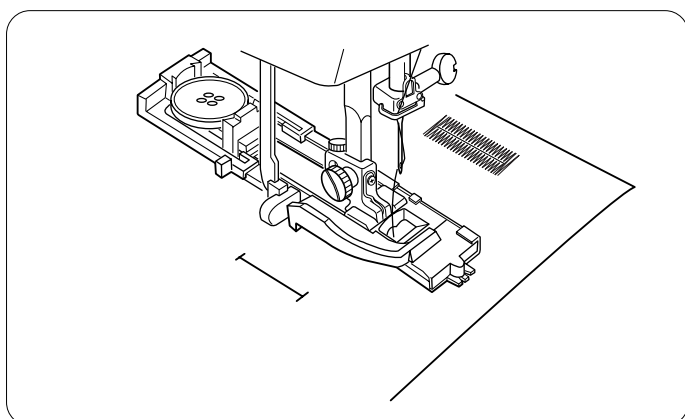
018 Bound Buttonhole (Increase stitch length so it is appropriate for your fabric weight). For fabric preparation see page 50, steps 1 – 3.

The buttonhole will automatically straight stitch:

- ① backwards on left side and back side
- ② forwards on right side, front side and stop

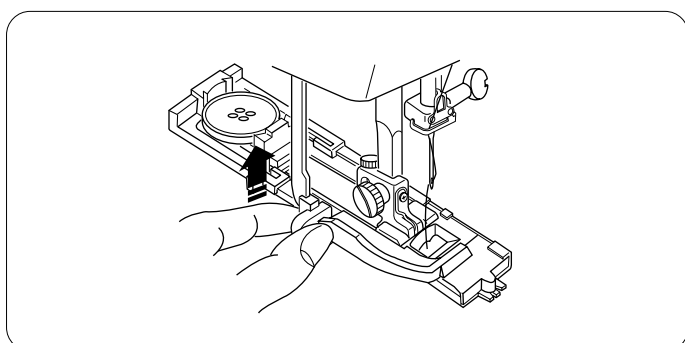
To complete bound buttonhole see page 51, steps 9 – 16.

After the buttonhole is completed and the machine stops sewing, raise the presser foot.

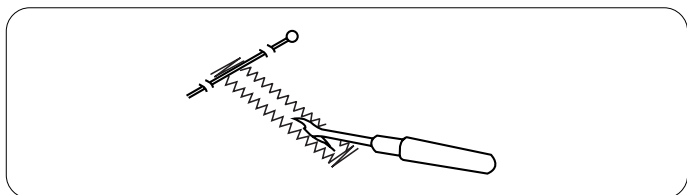


Sewing Additional Buttonholes

To sew another buttonhole - raise foot, move fabric, lower foot and sew.

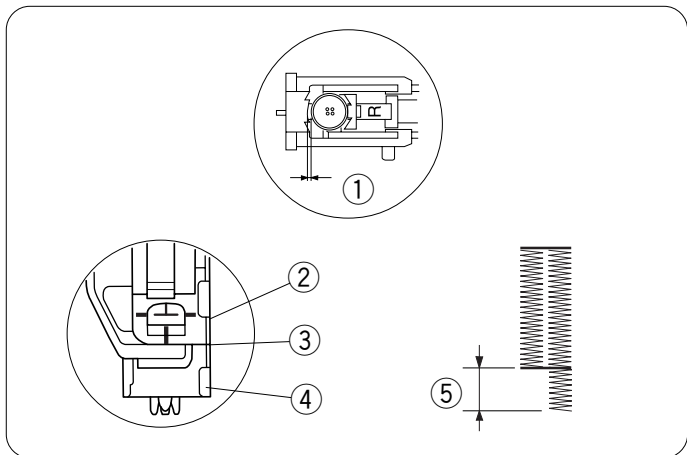


When buttonhole sewing is finished, push the buttonhole lever upward as far as it will go.



Cutting Open Buttonhole

Place a pin just inside the bartack at each end to prevent accidentally cutting bartacks. Cut buttonhole open with the seam ripper.

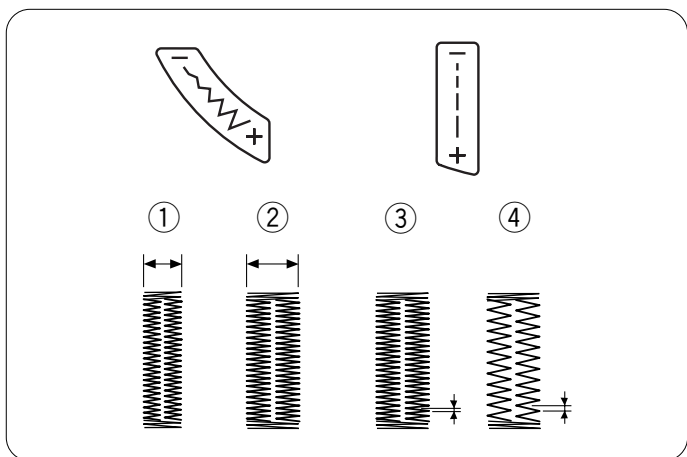


Troubleshooting Tips

If the button is extremely thick and difficult to fit through the test buttonhole, you can lengthen the buttonhole by pulling the buttonholder on the foot back a little extra. The length of the hole will increase by that same amount.

Make sure there is not a gap between the slider and the spring holder. If there is a gap, the sides of the buttonhole will be different lengths ⑤.

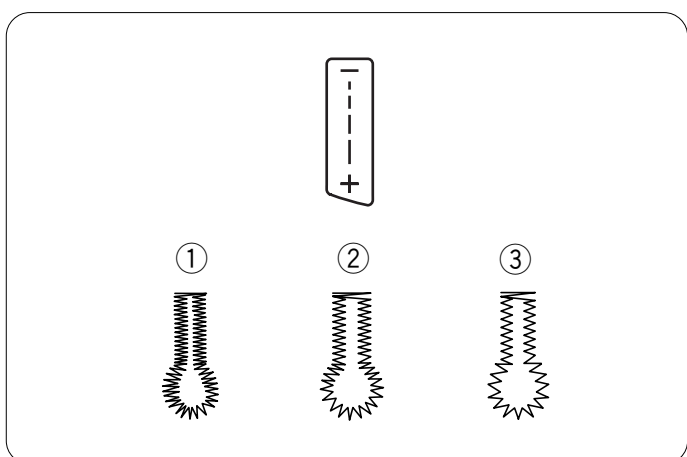
- ① Buttonholder (little extra)
- ② Slider
- ③ There should be no gap
- ④ Spring holder
- ⑤ Incorrect buttonhole (different lengths)



• How to Alter Buttonhole Stitch Width and Length

Press the “-” or “+” side of the keys to alter the buttonhole for different weights of fabric and thread.

- ① Narrower width
- ② Wider width
- ③ Shorter stitch
- ④ Longer stitch



• Alter Keyhole Buttonhole Stitch Length According to Fabric and Thread

- ① 0.3 - Lightweight fabric
(for lawn and batiste)
- ② 0.4 - Mediumweight fabric
(for gabardine, linen and wool)
- ③ 0.8 - Heavyweight fabric
(for coating and polar fleece)

Corded Buttonhole

Corded buttonholes are found on coats and other garments that require extra strong buttonholes. The cording reinforces and accentuates the buttonhole.

Sew a corded buttonhole using the same procedure as described for a classic buttonhole.

- Set the stitch width to match the thickness of the cording.

With the buttonhole foot raised, hook the filler cord ① on the spur ② at the back of the buttonhole foot. Bring the ends forward under the buttonhole foot.

Position the cord into the forks ③ on the front of the foot to hold the ends tight.

Hand turn the flywheel to lower the needle into the garment where the buttonhole will start and lower the presser foot.

Press the foot control and slowly sew the buttonhole. Each side of the buttonhole and the bartacks will be sewn over the cord ①. Remove the fabric from the machine and cut only the sewing threads.

Pull the left end of the cord ① to tighten it. Thread the end through a darning needle, draw to the wrong side of the fabric and cut.

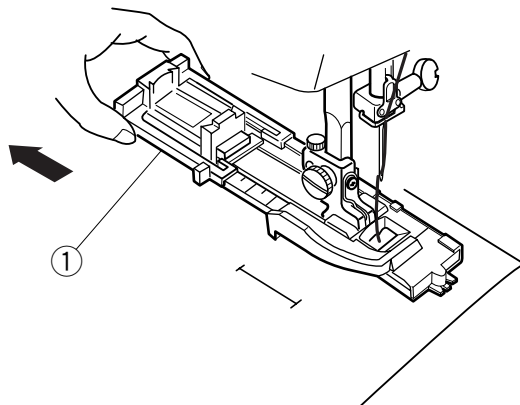
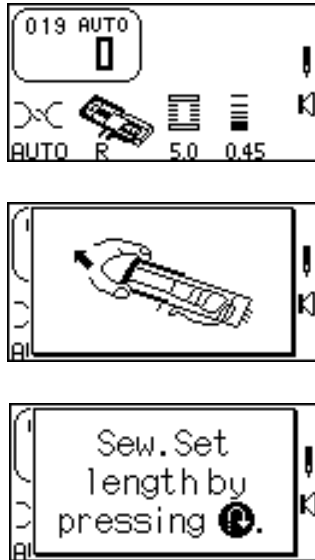
Cut open buttonhole.

4-Step Memory Buttonholes – Classic and Bound

019 Classic Buttonhole (4 Step Memory)

This buttonhole is especially suited for oversized novelty buttons or larger decorative openings. All buttonholes should use interfacing suitable for the fabric weight. Test sew buttonhole on sample swatch.

Select 019. The LCD screen will briefly show two messages.



Use either the R or B buttonhole foot. If you use the R foot, fully extend open the buttonholder ① (maximum buttonhole size with this foot is 3.2 cm or 1 1/4").

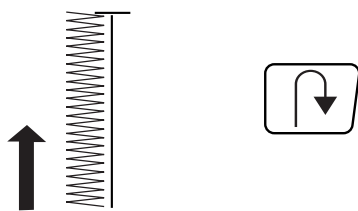
DO NOT pull down the buttonhole lever.

Alter the buttonhole width to match the fabric and thread. See page 46.

Mark the buttonhole area on the fabric. Place **both threads** to the left **under** the foot. Insert the garment under the foot and hand turn the flywheel to lower the needle at the starting point. Lower the buttonhole foot.

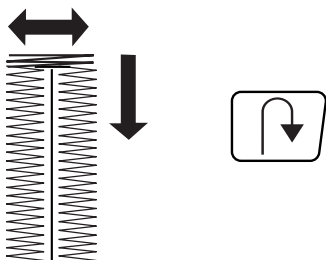
Start sewing - zigzag backwards on left side. Stop sewing when you reach the desired buttonhole length.

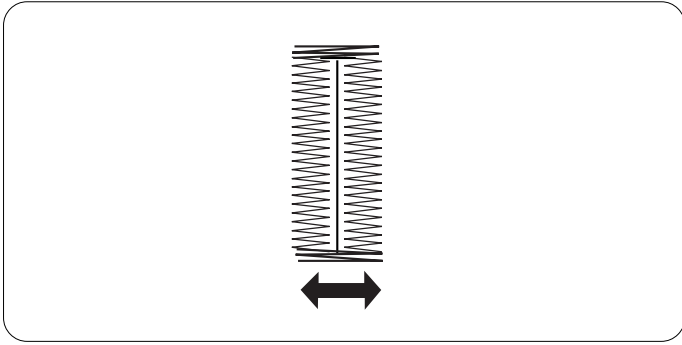
Press "Reverse" key.



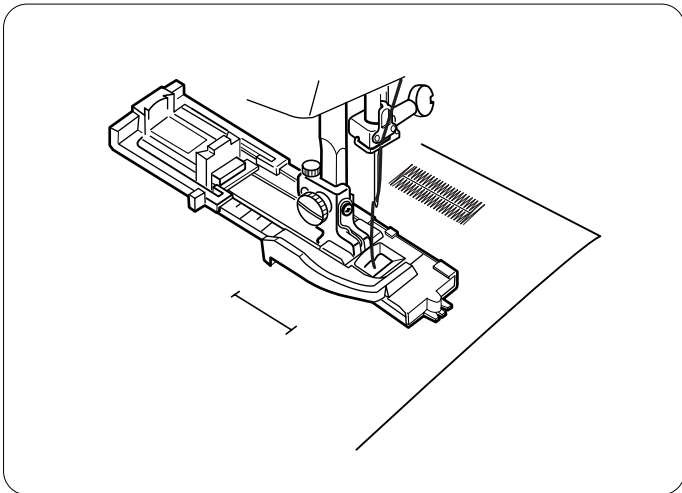
Start sewing - back bartack and zigzag forward on right side. Stop sewing when you are opposite the starting point.

Press "Reverse" key.





Start sewing – front bartack, lockstitch. Machine will automatically stop when buttonhole is completed.

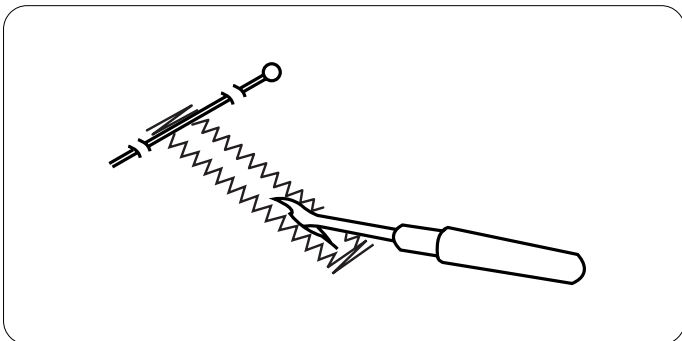


Sewing Additional Buttonholes

To sew another buttonhole the same size - raise foot, move fabric, lower foot and sew.

Reset Buttonhole Size

To sew a buttonhole a different size (or to adjust stitch length), reset the machine by pressing “ENTER” key or reselect buttonhole. Sew new buttonhole size using same method.

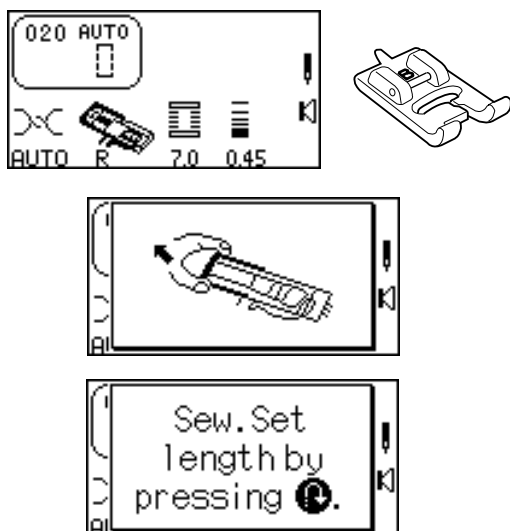


Cutting Open Buttonhole

Place a pin just inside the bartack at each end to prevent accidentally cutting bartacks. Cut buttonhole open with the seam ripper.

Troubleshooting Tip

If there is a difference in stitch length (density) between the right and left sides of the buttonhole, use the fine adjustment screw. See page 19.



020 Bound Buttonhole (4 Step Memory)

Great for oversized buttons requiring tailored buttonholes, welt pockets or larger decorative openings. All buttonholes should use interfacing suitable for the fabric weight.

Select 020. The LCD screen will briefly show two messages.

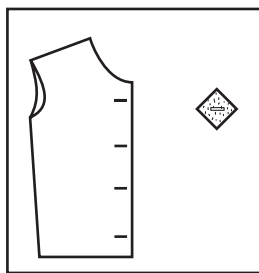
Increase stitch length so it is appropriate for your fabric weight.

Test sew the buttonhole on sample swatch.

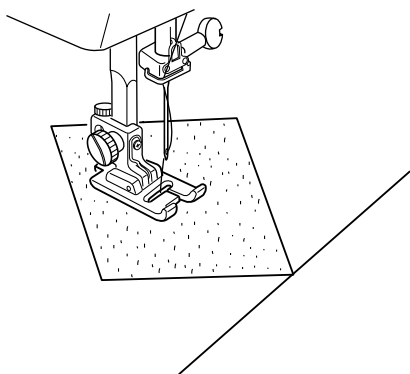
Attach buttonhole foot B. (You could use the R buttonhole foot. If you use R foot, fully extend the buttonholder open.)

DO NOT pull down the buttonhole lever.

1. 2.



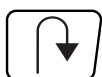
3.



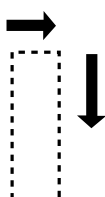
4.



5.



6.



7.



1. Prepare bias cut squares. Mark buttonhole on right side of garment and wrong side of bias squares. To determine the buttonhole length, add the diameter of the button to the thickness of the button.

2. Place bias cut squares on fabric with right sides together matching guidemarks.

3. Place both threads to left under foot. Insert the garment under the foot and hand turn the flywheel to lower the needle at the starting point. Lower the B buttonhole foot.

4. Start sewing – straight stitch backwards on left side. Stop sewing when you reach the desired buttonhole length.

5. Press “Reverse” key.

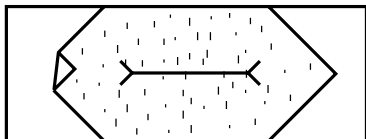
6. Start sewing – straight stitch back edge and straight stitch forward on right side. Stop sewing when you are opposite the starting point.

7. Press “Reverse” key.

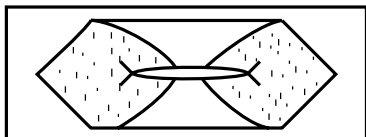
8.



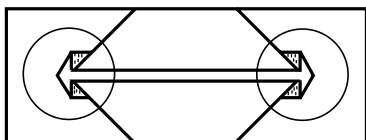
9.



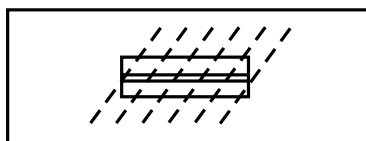
10.



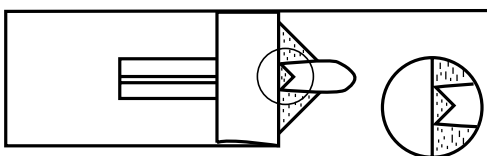
11.



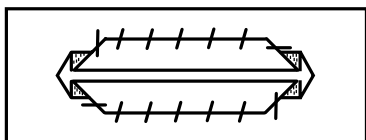
12.



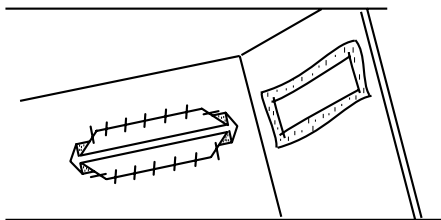
13.



14.



15. 16.



8. Start sewing – straight stitch front edge, lockstitch. Machine will automatically stop when buttonhole is completed.

9. Cut down center of sewn rectangle, snipping into each corner.

10. Pass the bias square through slit and pull to wrong side of garment to form the lips of buttonhole.

11. From wrong side, press lips into center and fold bias fabric over lips forming a tuck at each end.

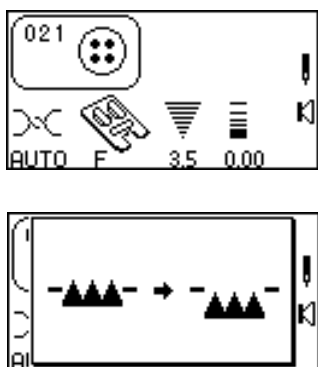
12. From right side, align lips. Baste and press.

13. Reinforce both ends by folding right sides together at buttonhole end and straight stitch in along the stitch line.

14. Trim away excess bias fabric. Fasten bias fabric by hand.

15. Repeat steps 1 to 11 to form underside of buttonhole on facing of garment.

16. Pass bias fabric through slit and pull to wrong side of fabric. Press flat.

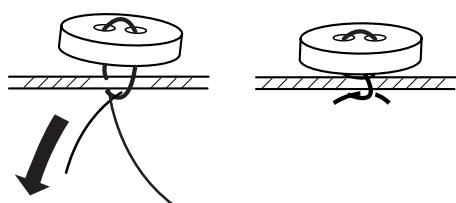
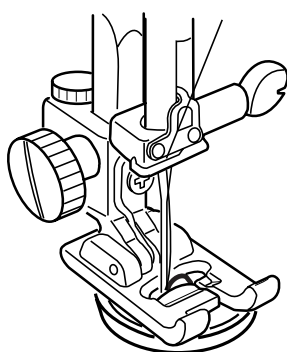


How To Sew On a Button

Hand sewing buttons to a garment is very time-consuming. Sew them on in one quick, easy step.

Select 021. The LCD screen will briefly show a message. Drop the feed dog. See page 16.

- Set the stitch width according to the position of the holes in the button.



Mark button placement on fabric. Use washable glue or transparent tape to temporarily secure the button. Place the button and fabric under the presser foot. Match the holes in the button to the horizontal slot on the presser foot.

Turn the flywheel by hand until the needle is down inside the left hole of the button. Lower the presser foot.

Turn the flywheel by hand to position the needle above the right hole of the button. Press the “*Stitch Width*” key to adjust the needle over the right hole.

Stitch several times.

After you finish sewing, cut the thread leaving 10-15 cm (4-6”) of thread at the button.

Pull the thread to the reverse side of the fabric and tie the threads.

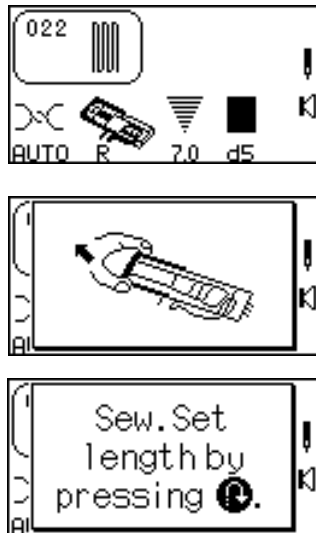
Raise the feed dog after sewing on buttons.

NOTE: The optional Sewing on Button foot grips the button better and also allows you to easily create a thread shank.

Darning

Darning with a sewing machine saves a lot of time. It is used for repairing very worn areas (not holes) in fabric.

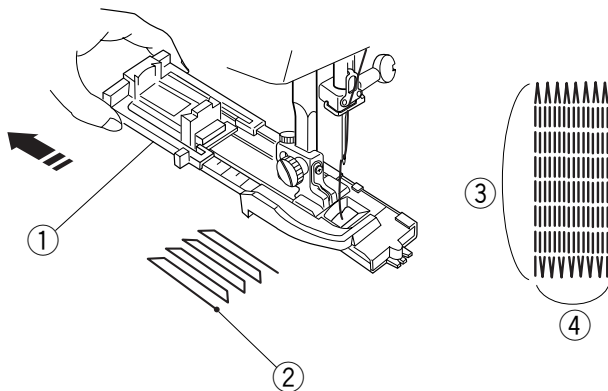
Select 022. The LCD screen will briefly show two messages.



Automatic Darning

Extend the buttonholder ① completely open. Place both threads to the left under the foot. Insert fabric under the foot and lower the needle at the starting point ②. Lower the foot. Sew.

The size of one darning cycle is variable. However, the maximum darning cycle length ③ is 2 cm (3/4") and the maximum darning cycle width ④ is 7 mm (1/4").



Setting Memory Darning Size

To darn a length less than 2 cm (3/4") ⑤, stop the machine after sewing the desired length and press the "Reverse" key. The darning length has now been determined. Restart and sew until the machine stops automatically.

To sew another darning cycle with same size - raise foot, move fabric, lower foot and sew.



Reset Darning Cycle Size

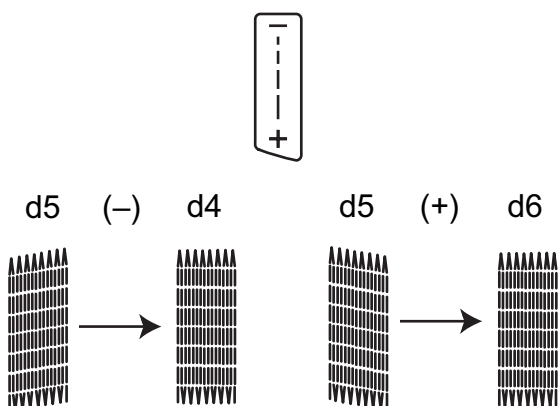
To sew darning with a different size (or width/length adjusted), reset the machine by pressing "ENTER" key or reselect 022. Sew new darning size using same method.

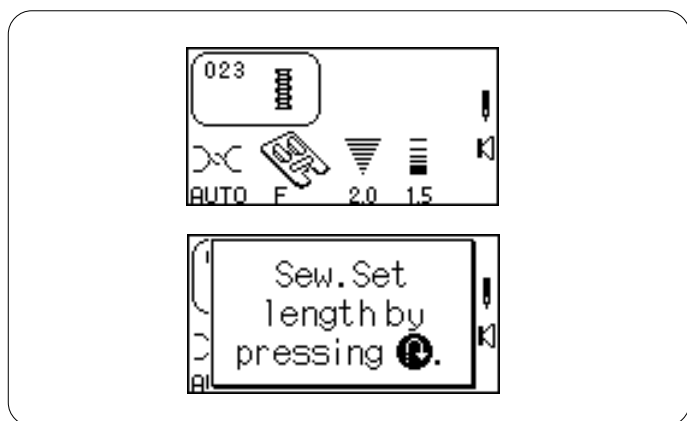
To Adjust the Evenness of Darning Stitches

Fabric and the number of layers can affect darning. If one side of darning is higher or lower than the other, make them even by pressing the "Stitch Length" key.

If left corner is lower than right side, press "-".
If left corner is higher than right side, press "+".

NOTE: d5 is default setting. Evenness can be set between d1 and d9.

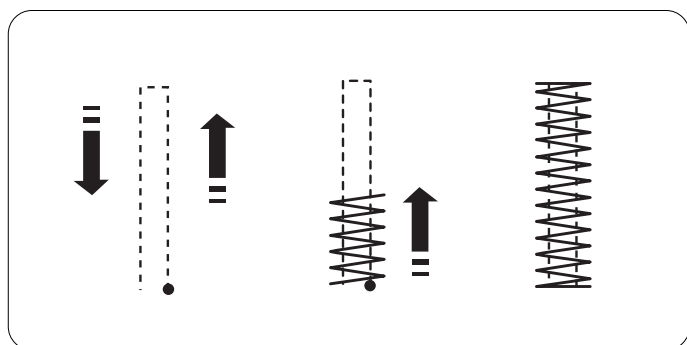




Bartacks

A bartack is a reinforced stitch used on garment areas that receive extra stress like pockets, belt loops and zippers.

Select 023. The LCD screen will briefly show a message.

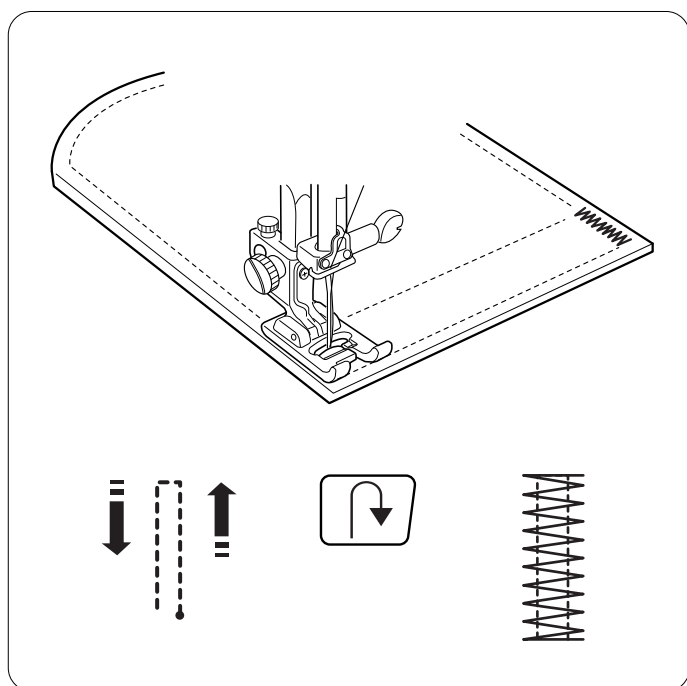


Automatic Bartack

Place the fabric under presser foot. Lower presser foot. Sew until the machine automatically stops. A 1.5 cm (5/8") bartack is sewn.

Press the "Stitch Width/Needle Position" or "Stitch Length" key to adjust bartack and density.

Make a longer bartack by combining bartacks until desired length is obtained.



Setting Memory Bartack Size

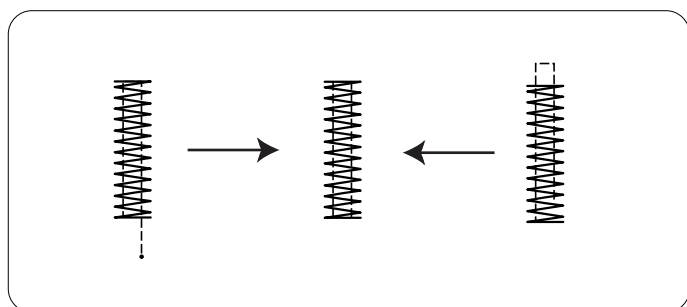
It is possible to sew a bartack length shorter than 1.5 cm (5/8").

Place the fabric under presser foot. Lower presser foot. Sew until the desired bartack length is sewn. Stop and press the "Reverse" key. Sew until the machine automatically stops.

To sew another bartack the same size - raise foot, move fabric, lower foot and sew.

Reset Bartack Size

To sew a bartack a different size (or width/length adjusted), reset the machine by pressing "ENTER" key or reselect 023. Sew new bartack size using same method.



Fine Adjustment Screw - Very heavy fabrics may require the use of the fine adjustment screw. See page 19.

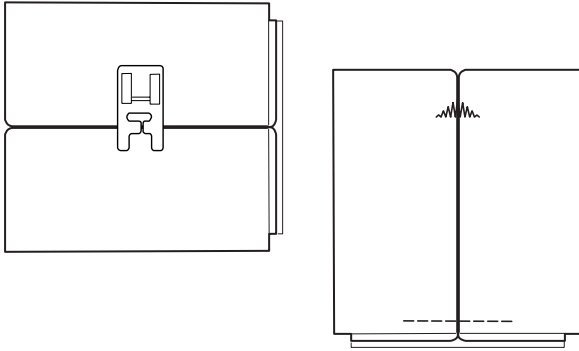
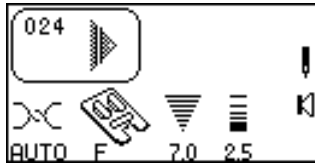
Arrowtack

This stitch is used to reinforce the corners of pockets and pleats.

Select 024.

Place fabric under foot so center pleat line is horizontal in front of you. Lower presser foot so the center bar lines up with the pleat line. (This allows the widest part of the stitch to be sewn in the pleat center.) Begin sewing and press “Auto-lock” key. Machine will complete arrowtack, lockstitch and automatically stop.

NOTE: Adjust foot pressure and fine adjustment screw (see page 19) for best results on very heavy fabrics.

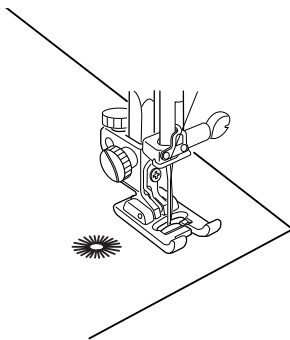
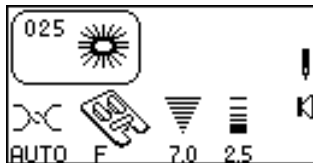


Eyelets

Small eyelets may be sewn on belts, used for lacing cords or simply used for a decorative effect.

Select 025.

The machine will sew an eyelet and automatically stop. Cut open the eyelet with a seam ripper, pointed scissors or an awl.



Shell Tuck

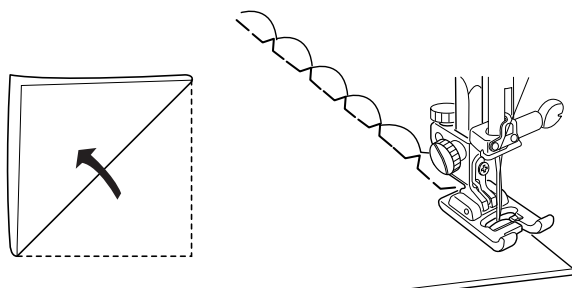
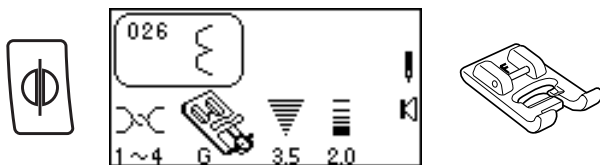
This is a pretty hem finish for lingerie and tricot fabrics. You can sew shell stitches in any direction on knits or soft silky wovens.

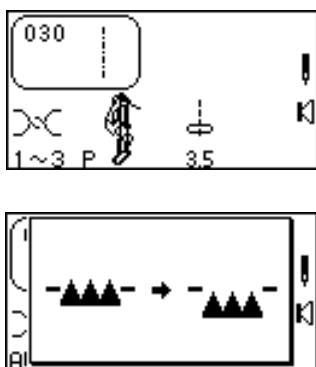
Select 026.

Attach satin stitch foot F.

Press “Mirror Image” key. Tighten needle tension to 7-8.

Use a lightweight fabric. Fold and stitch on the bias. Allow the needle to just clear the folded edge of the fabric when it swings off the fabric to the right. If you sew rows of shell stitches, space the rows at least 1.5 cm (5/8”) apart.





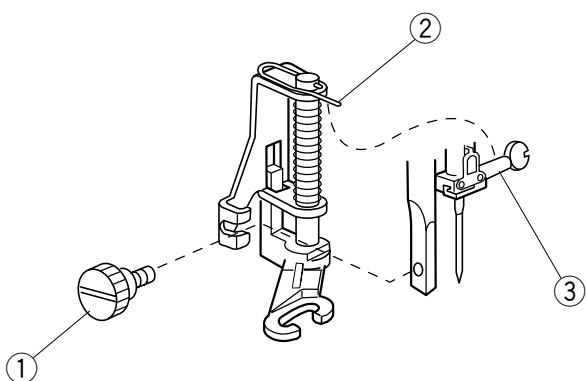
Basting Stitch

The basting stitch can be used to temporarily hold together two or more layers of fabric. Use a fine needle to avoid leaving permanent needle marks.

Select 030.

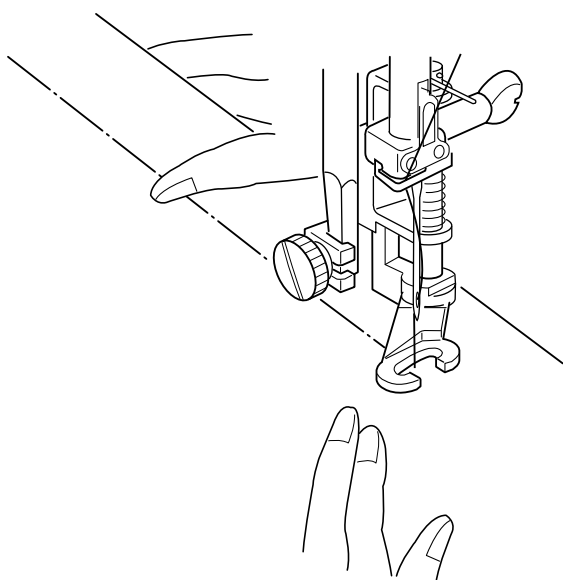
Lower the feed dog. Set foot pressure dial to 2 or 1. Loosen needle tension to 3.

The LCD screen will briefly show a message.



How To Attach Open Toe Embroidery/Darning Foot

Raise the needle and presser foot. Turn OFF power switch. Loosen set screw ① and remove shank. Place the open toe embroidery/darning foot on the presser bar with the pin ② over the needle clamp screw ③; tighten set screw. Turn ON power switch.



Pull needle and bobbin threads behind the presser foot. Place fabric under foot and lower presser foot. Start machine. The machine will sew one stitch and stop.

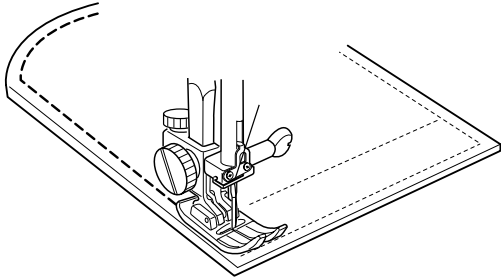
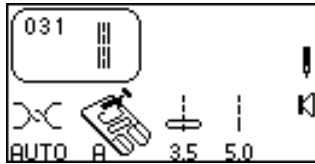
Hold the fabric firmly and move it to the area for the next stitch. Start machine.

Continue the procedure until all basting is complete.

- When basting is complete, reset foot pressure dial, remove the open toe embroidery/darning foot, attach shank and raise the feed dog.

CAUTION: Do not pull the fabric when sewing; the needle could be deflected and break.

Saddle Stitch

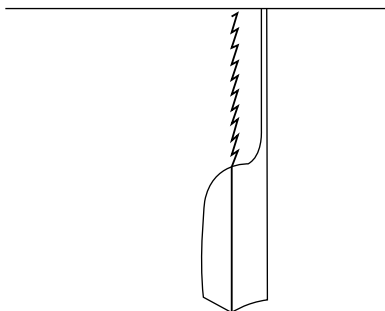
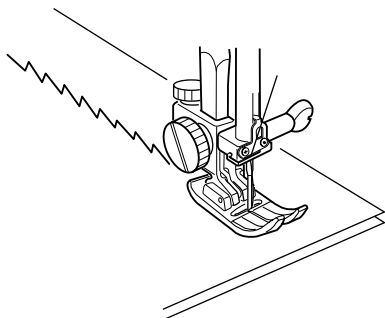
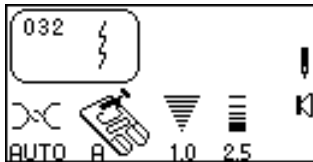


Wonderful as a lovely topstitch effect for suits, blazers, jumpers, jeans and linen napkins. Because of its configuration, once in place, this stitch is not easily removed.

Select 031.

Use edge of foot as guide for fabric edge. Press “*Stitch Width/Needle Position*” key to move needle position and set distance topstitching will be from fabric edge. Lower the presser foot and sew.

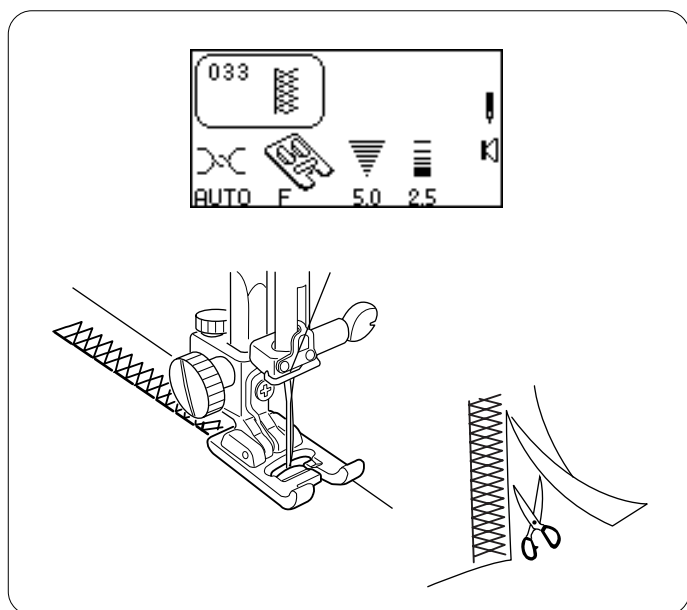
Stretch Seam



A narrow stretch stitch that eliminates puckering on knit fabrics and bias seams. The seam can be pressed flat and opened.

Select 032.

Sew seam and press it open.

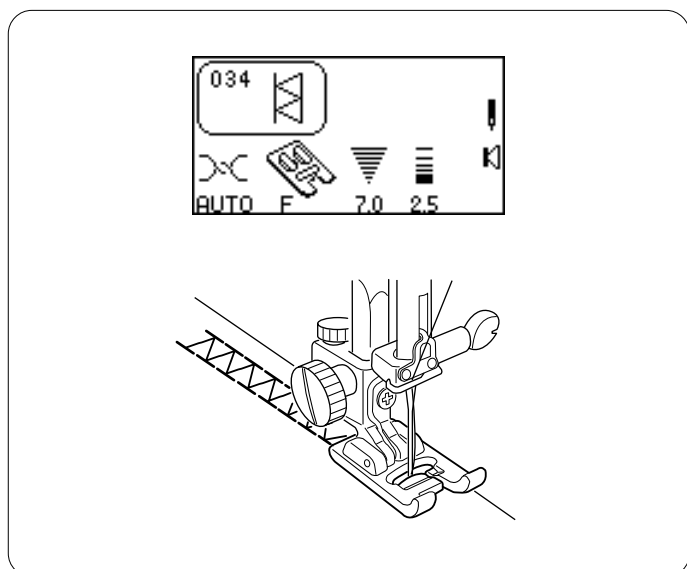


Overlock Stitch

Create a straight seam and overcast at the same time.

Select 033.

Sew seam. Trim away any excess seam allowance.



Double Overlock Stitch

This stitch finishes the edges of your seams similar to a commercial overlock machine stitch.

Elna invented this stitch in 1976.

Select 034.

Place the fabric edges together under the presser foot. Trim away any excess seam allowance.

SECTION IV - Quilting

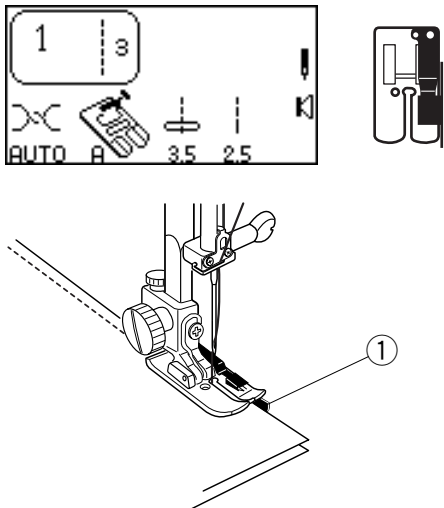
Piecing Fabrics Together

Accuracy is the key when sewing together fabric pieces for a quilt. Be sure to precisely cut your fabric pieces with 6.5 cm (1/4") seam allowances.

Select 1.

Attach scant 1/4" foot.

The black bar on the foot is a perfect 1/4" seam guide from center needle position (3.5). Place fabric edges (right sides together) under foot against the black guide ① and sew a perfect 1/4" seam. OR Use 4.5 needle position for a scant 1/4" seam.



Quilt Stitch

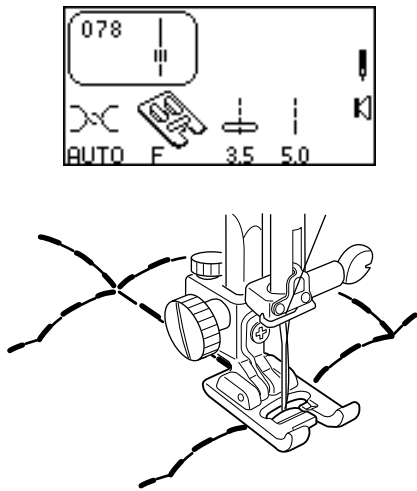
The quilt stitch adds a three dimensional effect when outlining designs.

Select 078.

Place monofilament (clear invisible) thread in the needle and 60 weight cotton thread on the bobbin (color matches quilt back).

You might need to increase needle tension to 6.

Use a washable fabric marker to draw design lines on quilt top. Place batting (wadding) between quilt top and backing fabric. Sew over design lines.



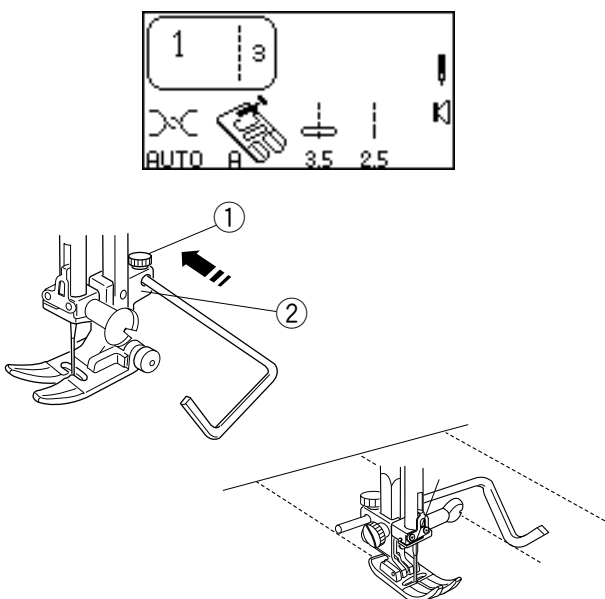
Quilt Guide

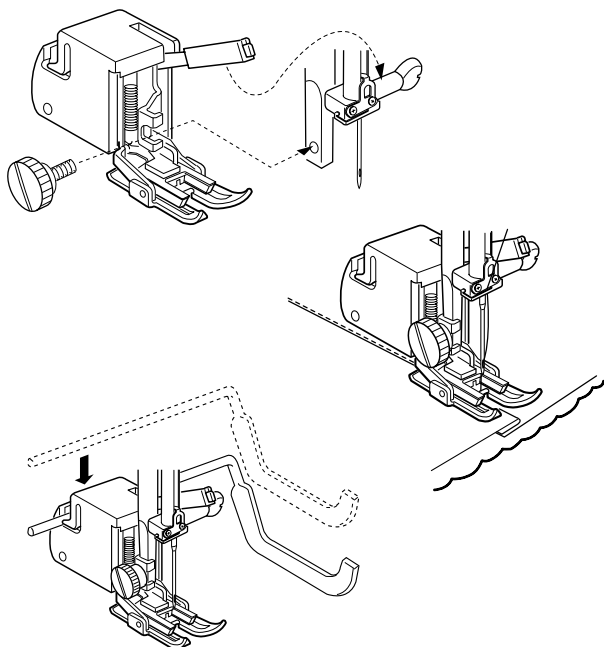
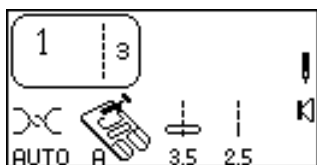
The quilt guide is helpful when sewing parallel, evenly spaced rows of stitching.

Select 1.

Loosen the quilt guide holding screw ①, slide the quilt guide in the opening ② until the desired width is set and tighten the screw.

Use a washable marker to draw the first line for stitching. Sew over line. When sewing subsequent rows of stitching, the quilt guide will rest on the previous row of stitching.





Open Toe Walking Foot

Great for keeping quilt layers from shifting when sewing.

How To Attach Open Toe Walking Foot

Press the “Up/Down Needle” key until the needle is in an up position. Raise the presser foot.

Turn **OFF** power switch. Loosen thumbscrew and remove shank. Place the walking foot on the presser bar with the lever over the needle clamp screw; tighten thumbscrew. Turn **ON** power switch.

Select 1.

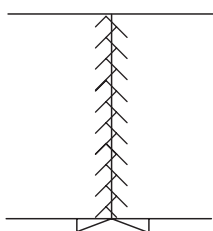
Set stitch length 2.5 – 3.5. Set foot pressure dial between 2 and 3.

Sewing Quilt Layers

Pin quilt layers together (backing, batting/wadding and quilt top). Place quilt layers under foot. Lower open toe walking foot. Sew as close as possible to the seam lines for “Stitch in the Ditch” quilting.

Optional: Attach Quilt Guide

Snap quilt guide down into groove on back of open toe walking foot. Slide the quilt guide in the opening until the desired width between the stitching rows is set. Pin quilt layers together. Follow marking and sewing instructions described on the page 59.



Patchwork

A fun method of decorating your quilt (often called “Crazy Quilting”) is to sew a patchwork stitch over the opened seam.

Select 1.

Sew a straight stitch seam and press seam allowance open.

Select a patchwork stitch: 085 – 100.

Sew with stitching centered over the seam.



French Knots

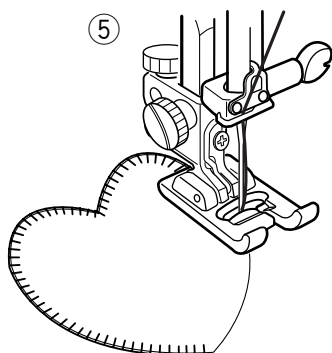
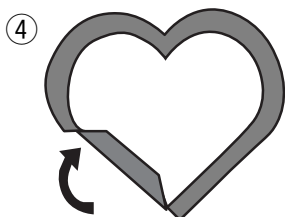
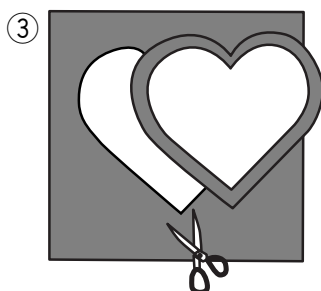
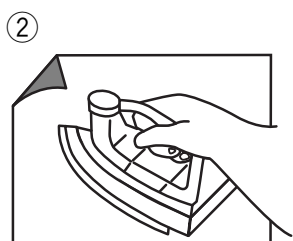
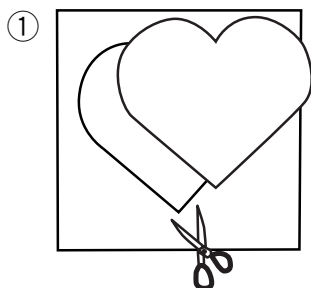
Why spend time sewing French Knots by hand?

Select 073.

Tighten needle tension 5-8.

Place fabric under foot and sew one French Knot. Lift up presser foot, move fabric, lower presser foot and sew next French Knot.

NOTE: If you want to sew a row of evenly spaced French Knots, you must program straight stitches after the French Knot. See Combining a Sequence on page 68.



Buttonhole Appliqué

A favorite method of applying small pieces of fabric to quilts for decoration.

Select 079, 080, 081 or 082.

Use fine embroidery thread (50 weight or finer) and needle appropriate to fabric. You may need to set the foot pressure dial to 2.

- ① In this type of appliqué, raw edges are folded under.

To prepare raw edge, first cut appliqué design out of paper.

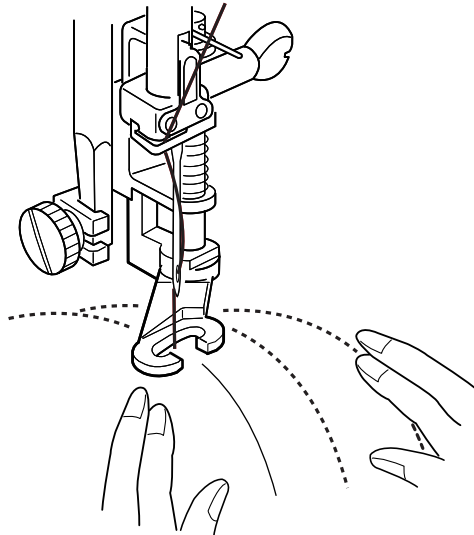
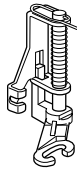
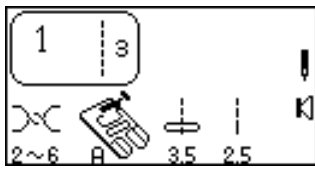
- ② Press fusible webbing to wrong side of appliqué fabric.

- ③ Cut the fabric slightly larger than paper pattern.

- ④ Fold fabric under to match paper pattern size. Remove pattern. Press only the edge to form a perfectly shaped design.

NOTE: *Clip curves where necessary.*

- ⑤ Press appliqué in place and sew. Straight edge of the stitch is sewn next to folded edge of appliqué.



Free Motion Quilting or Stippling

Add dimension to your quilt by stitching down the surrounding background fabric around larger designs, like hearts or flowers. Lower the feed dog and sew fabric layers in a random pattern without the stitching lines crossing each other. The more compact the stitching, the more the background will flatten and make surrounded designs stand out. This is a technique commonly referred to as stippling.

Select 1.

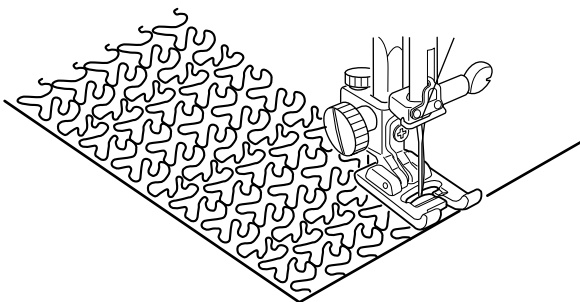
Attach open toe embroidery/darning foot P-2. See page 56.

Lower the feed dog. Set foot pressure dial to 2 or 1. Loosen thread tension to 3.

Test sew using exact conditions (fabric, thread, etc.) of finished project. Place batting between quilt top and backing fabric. Place all fabric layers under foot and lower foot.

Press “Up/Down Needle” key and bring bobbin thread to top. Pull both threads under foot and to the back. Sew several stitches in place to lock threads at beginning. Move fabric layers while sewing and check tension. Adjust tension until it is balanced inside the batting (no thread loops on top or bottom).

HINT: Establish a good sewing rhythm by moving the fabrics slower than the machine speed in an even, consistent manner. Keep the fabrics flat against the machine bed.



Stippling Stitch

A pre-programmed stippling stitch is a fast and easy method to quilt small areas.

Select 083.

Place batting (wadding) between quilt top and backing fabric.

SECTION V - Decorative Sewing

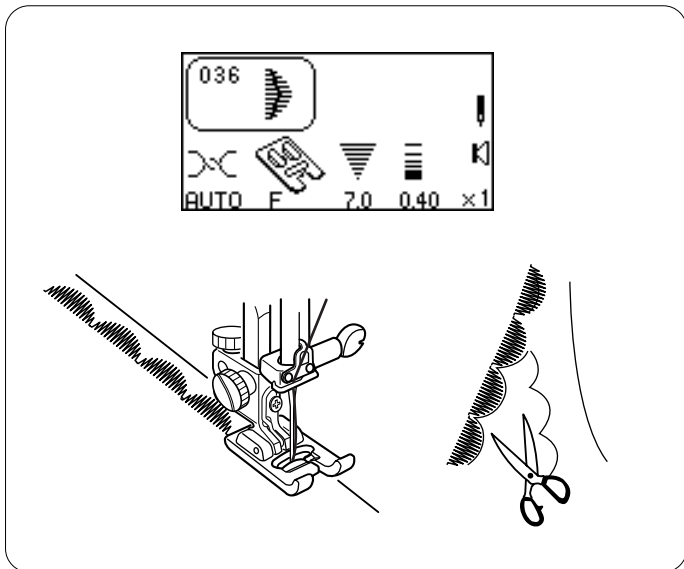
Scallop Edges

Attractively finish edges of collars, pockets and placemats.

Select 035, 036, 038 or 039.

To edge a collar, place interfacing/stabilizer between upper and under collar and sew scallop on seam line.

After sewing, trim fabric close to stitching taking care not to cut scallops.



Corded Trim

Sew over three strands of cording to create unique borders and trims. Pearl cotton, knitting yarn, embroidery floss, lace thread, fine wool or lily yarn may be used as cording.

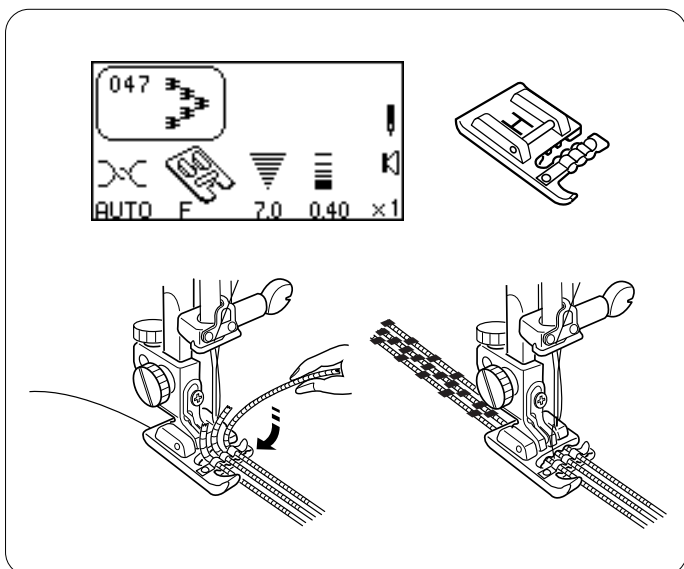
Select 047.

Attach multi cord foot H.

Slide the sewing threads to the left and insert three strands of cording into the slots of H cording foot with 5 cm (2") extending behind the foot. Knot together the strand ends. (The slots on H foot will hold the lengths of cording while stitches form over them.)

Mark design on the right side of the fabric with a washable marker.

Stitch slowly and smoothly, turning the fabric as you sew while guiding the cording over the design lines.



Single Cord For Gathering Heavy Fabric

Select 2.

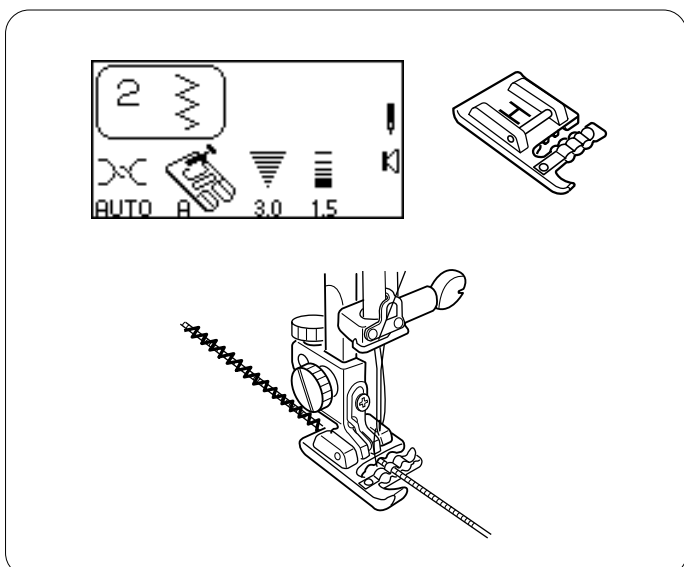
Attach multi cord foot H.

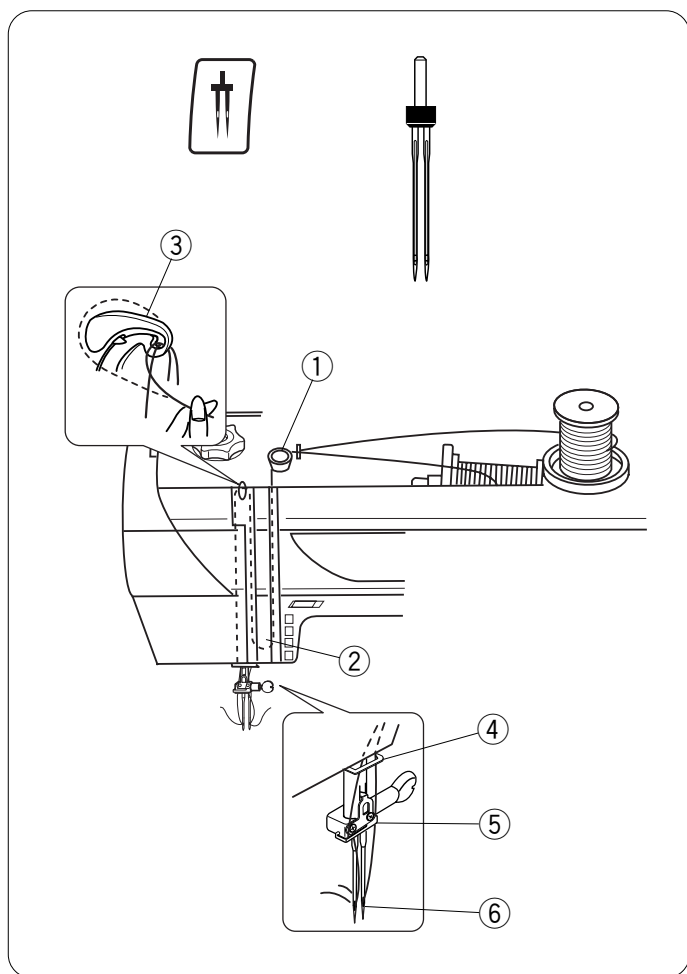
Decrease stitch width to 3.0.

Insert a single cord in center groove of H foot. Sew over cord.

Pull cord for desired amount of gathering. Secure ends and distribute gathers evenly.

Lay gathered fabric over flat fabric and sew the two fabrics together using straight stitch with stitch length at 3.0 or higher.





Twin Needle Sewing

As the name implies, the twin needle results in two identical parallel rows of stitches – utility or decorative.

The “*Twin Needle*” key should be pressed whenever using a twin needle. Be sure to test the stitch before sewing because twin needles are available in a variety of widths. The maximum stitch width available with the “*Twin Needle*” key activated is 3.0 and that maximum width is based on a standard 2 mm wide twin needle.

Turn OFF the power switch and insert a twin needle.

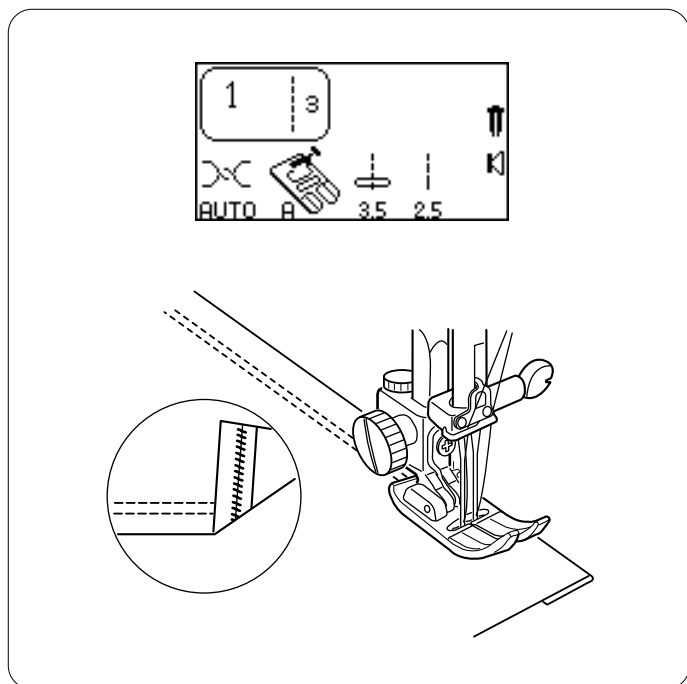
Insert the spool stand and additional spool pin. Place the spool pin felt and second spool on additional spool pin. See page 23.

Threading the Machine

- ① – ③ Thread 1 through 3 in the same manner as single thread. See page 25.
- ④ Draw the threads down and slide them through the right side of the lower thread guide.
- ⑤ Slide one of the threads through the needle bar thread guide on the left and the other one on the right.
- ⑥ Thread the needles from front to back.

NOTE: The needle threader cannot be used with a twin needle.

Turn ON the power switch.



Twin Needle Hem

A twin needle hem is quick and easy. This is an excellent hemming method for knit fabrics because the bobbin thread zigzags, allowing the hem to stretch with the fabric. Be sure to use a stretch twin needle for knit fabrics.

Select 1.

Press the “*Twin Needle*” key.

Fold the hem up desired amount and topstitch with the twin needle. Carefully trim away excess fabric using sharp scissors.

Twin Needle Decorative Stitches

Why not try two different thread colors in the needles?

Select a decorative stitch.

"Twin Needle" key should still be selected. Hand turn flywheel to test if needles hit the foot.

Place fabric and stabilizer under foot and sew.

After completing twin needle sewing, turn OFF the power switch. Remove twin needle. Set up machine for single needle sewing.

NOTE: If a stitch is not compatible with a twin needle, a warning message will appear in the LCD screen. Alphabets and monograms (300, 400 and 500 stitch numbers) will not function with the Twin Needle Key.

Satin Stitches – Elongation

Satin stitches 035 – 050 can be lengthened up to five times their original size without the stitch length varying.

Select 044.

Press "Elongation" key. (Each touch changes readout to next elongation.)

Place fabric and stabilizer under foot and sew. Press "Auto-lock" key while sewing and machine will complete the design, lockstitch and automatically stop.

- Change the stitch width or length for maximum options when combined with elongation.

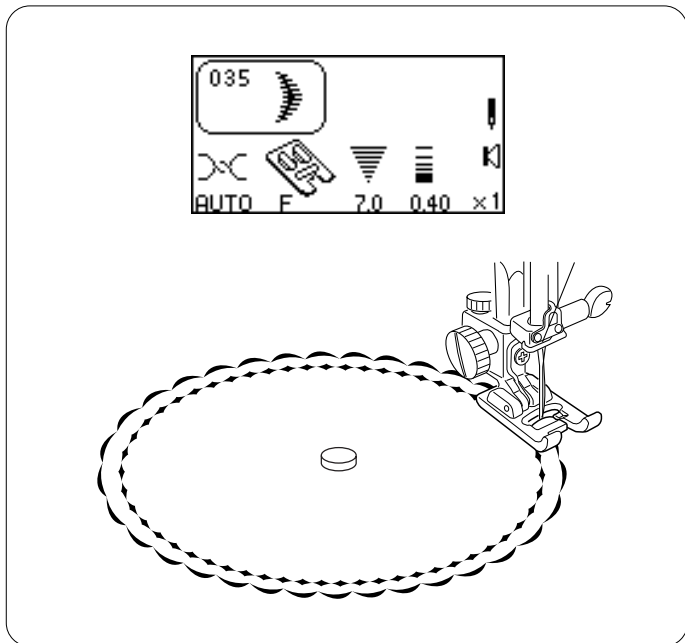
Mirror Image

Expand the possibilities by horizontally flipping the stitch.

Select 035.

Press "Mirror Image" key.

Place fabric and stabilizer under foot and sew. Press "Auto-lock" key while sewing and machine will complete the design, lockstitch and automatically stop.



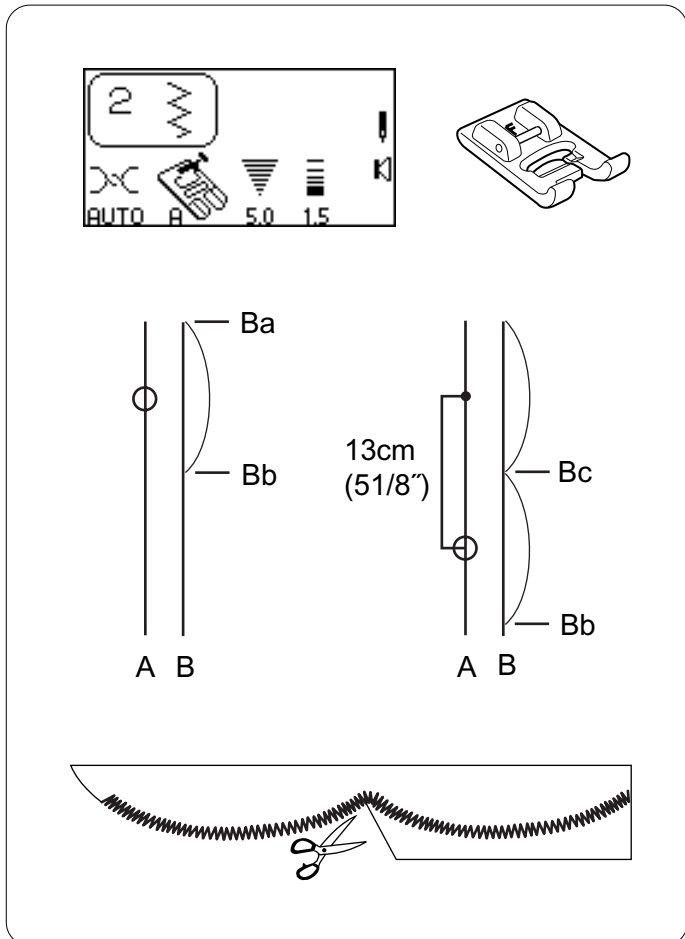
Circle Sewing

The circular sewing pivot pin is inserted into the extension table and provides a pivot point to sew perfect curves or circles for doilies or large scallops. Use either utility or decorative stitches.

Select a decorative stitch.

Fold fabric into quarters to determine center. Pierce center of fabric with pivot pin. Insert pivot pin into hole on the extension table. Lower presser foot and sew. Smooth the fabric out evenly from the center to the front of the foot by hand.

NOTE: Light to medium weight fabrics will need a stabilizer to sew the circle/curve correctly.



Large Scallop Border

Create scallops for beautiful fabric edges.

Select 2.

Attach satin stitch foot F.

Change stitch width to 2.5 or wider and stitch length to 0.3 or higher.

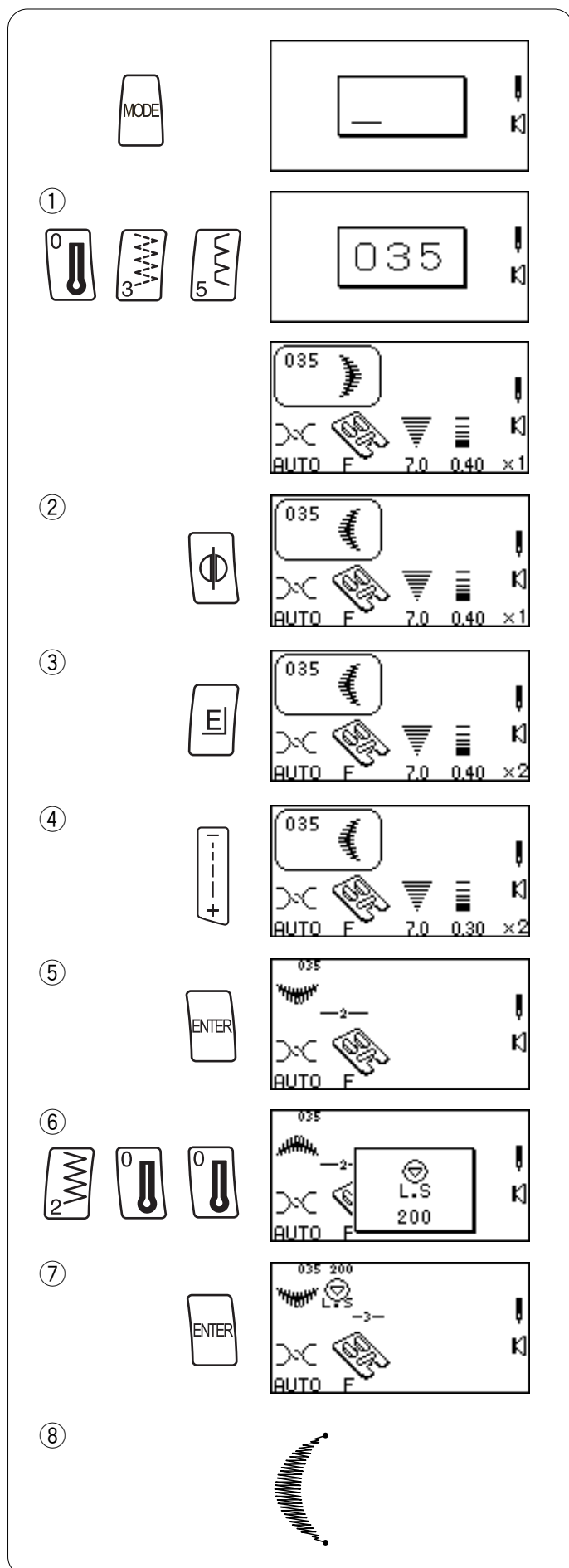
Draw two lines 2.5 cm (1") apart on the fabric with a washable fabric marker. Insert pivot pin through line (A) and place pivot pin in center pivot hole on table. Begin sewing at line (Ba) and stop at line (Bb).

To form second scallop, insert pivot pin through line (A), 13 cm (5 1/8") away from first pivot point. Pivot fabric and check that scallops will intersect. Begin sewing at line (Bc) and stop at line (Bd).

Sew remaining scallops using same method. Trim fabric away to create large scallop border.

SECTION VI - Programming Combinations (Must have 3 Digit Mode Activated)

Single Repeat with Lockstitch



① Select 035.

(Machine automatically converts to show selected stitch image and information after third digit is pressed.)

② Press “Mirror Image” key.

③ Press “Elongation” key.

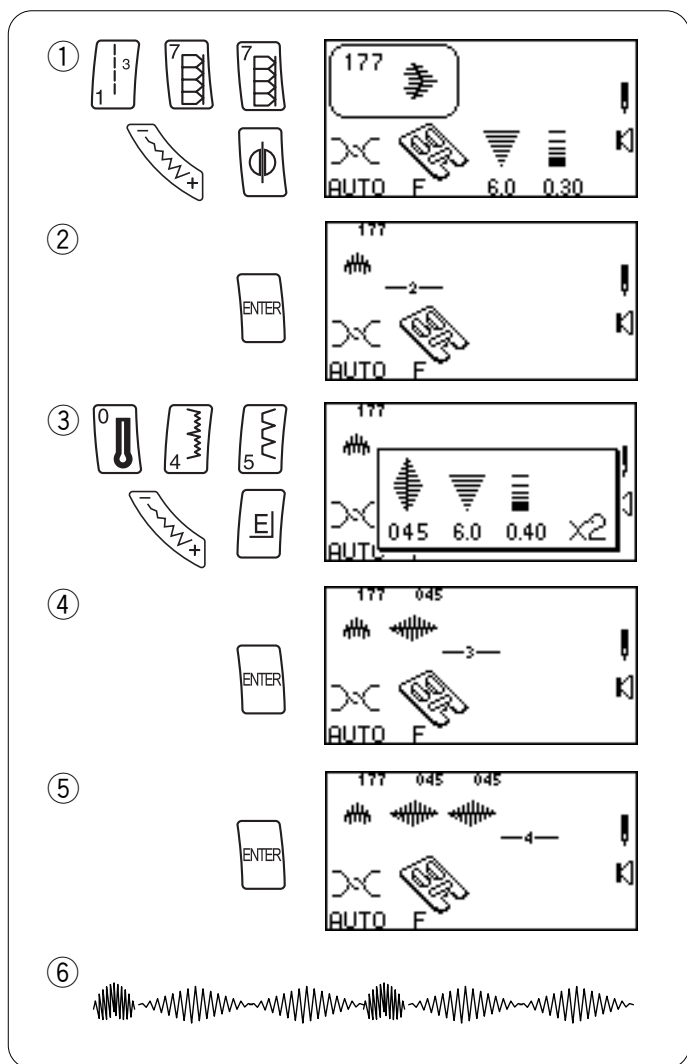
④ Press “Stitch Length” key and change stitch length to 0.30.

⑤ Press “ENTER” key to memorize. A blinking cursor will appear to indicate where next selected and entered stitch will be memorized in the sequence.

⑥ Select 200.

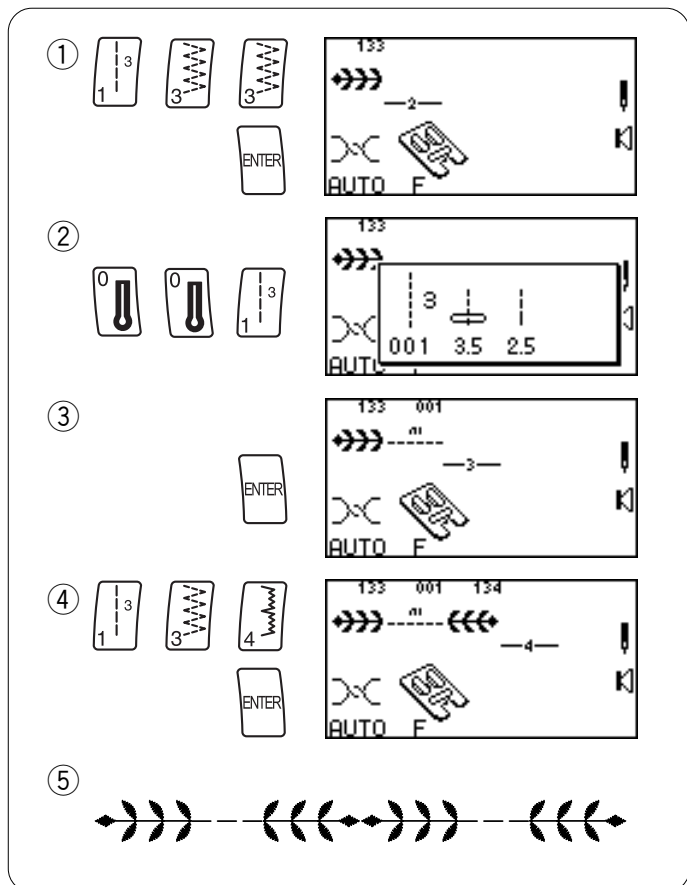
⑦ Press “ENTER” key.

⑧ Place fabric and stabilizer under foot and sew. Machine will lockstitch, sew the design, lockstitch and stop.



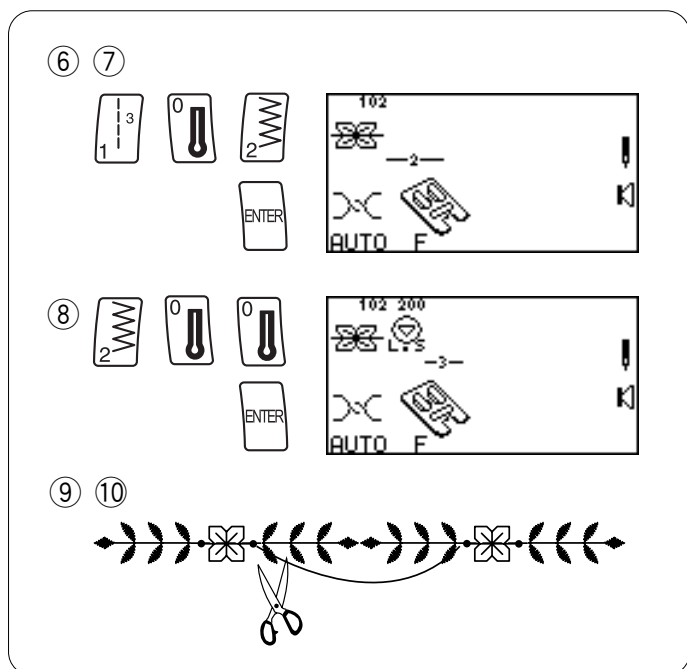
Combining a Sequence

- ① Select 177.
(Press "Mirror Image" key and change stitch width or length if desired.)
 - ② Press "ENTER" key to memorize. A blinking cursor will appear to indicate where next selected and entered stitch will be memorized within the sequence.
 - ③ Select 045.
(Press "Elongation" key and change stitch width or length if desired.)
 - ④ Press "ENTER" key.
 - ⑤ Press "ENTER" key.
 - ⑥ Place fabric and stabilizer under foot and sew memorized sequence repeatedly.
- NOTE:** Total capacity of one sequence is 50.



Inserting a Second Color

- ① Select 133. Press "ENTER" key.
- ② Select 001.
- ③ Press "ENTER" key.
- ④ Select 134. Press "ENTER" key.
- ⑤ Place fabric and stabilizer under foot and sew memorized sequence twice.



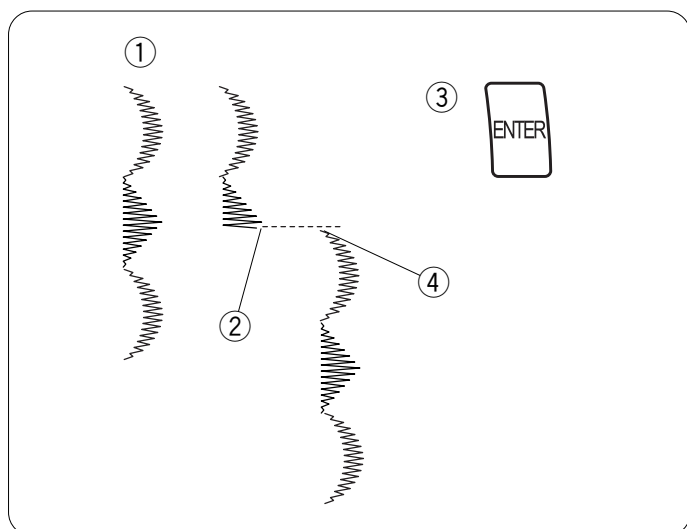
⑥ Change thread color.

⑦ Select 102. Press “ENTER” key.

⑧ Select 200. Press “ENTER” key.

⑨ Place fabric and stabilizer under foot and sew over straight stitch, placing flower between leaves.

⑩ Cut connecting threads.



Reset Combined Sequence to Beginning

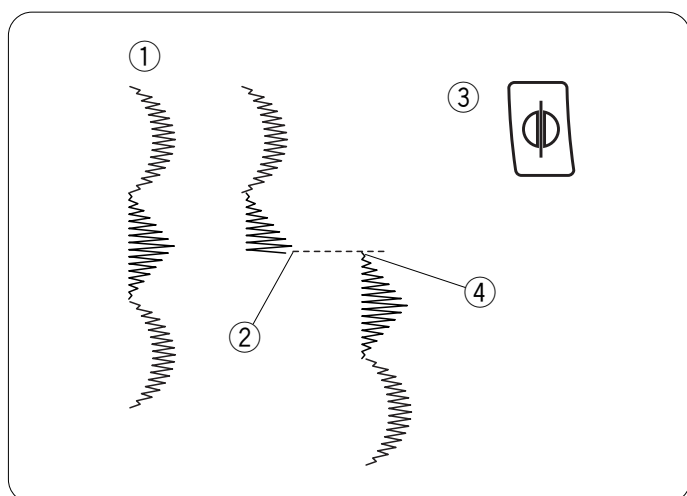
It is possible to partially sew the combined sequence and restart the machine at the beginning.

① Combine a sequence.

② Begin sewing. Stop sewing.

③ Press “ENTER” key. Reposition fabric.

④ Place fabric and stabilizer under foot and sew. The machine sews from the beginning of the combined sequence.



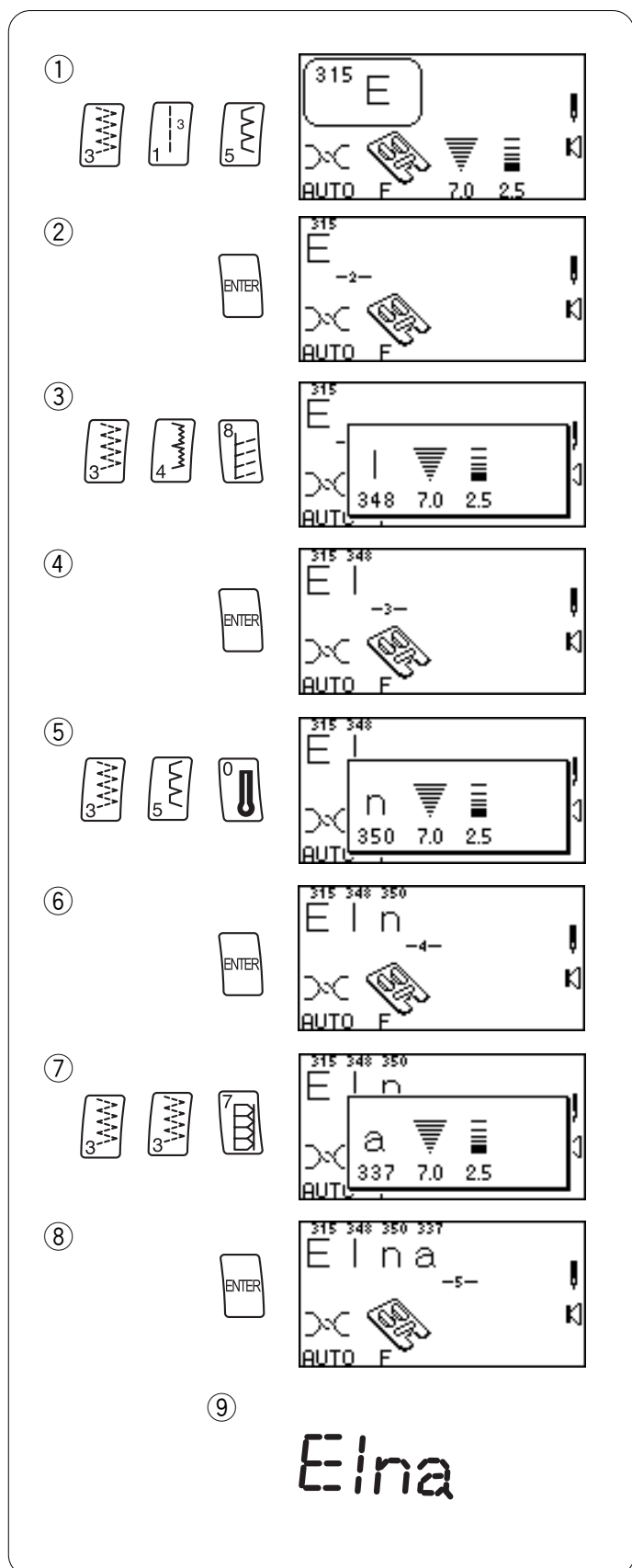
Reset Combined Sequence to Beginning of Incomplete Stitch

① Combine a sequence.

② Begin sewing. Stop sewing.

③ Press “Mirror Image” key. Reposition fabric.

④ Place fabric and stabilizer under foot and sew. The machine sews from the beginning of the incomplete stitch.



Combining Letters

There are 3 font styles:

Block letters (300 stitch numbers)

Gothic letters (400 stitch numbers)

Script or Monogram letters (500 stitch numbers)

① Select 315.

② Press “ENTER” key.

③ Select 348.

④ Press “ENTER” key.

⑤ Select 350.

⑥ Press “ENTER” key.

⑦ Select 337.

⑧ Press “ENTER” key.

⑨ Place fabric and stabilizer under foot and sew.

Cut connecting threads when using Block and Script letters. Do NOT cut connecting threads when using Gothic letters.

NOTE: Total capacity of one sequence is 50.

If you want to reduce letter height to 2/3 size, press “-” side of “Stitch Width/Needle Position” key before pressing “ENTER” key.



How to Preview the Combined Sequence (Utility, Satin, Decorative or Letters)

Program the following stitches using the “ENTER” key: 519, 178, 367, 423, 435, 315, 348, 350 and 337.

The LCD screen will show a maximum of 8 stitches at one time. The ARROW symbol ① located under the sequence indicates that there are more stitches off screen in that direction.

Press “Review Memory Left” key (or “Review Memory Right” key) to move blinking cursor and preview the entire sequence.

Editing

How to Delete Stitches

The location of the blinking cursor determines which stitch will be deleted.

① Press “Review Memory Left” key or “Review Memory Right” key to move cursor under stitch 178.

② Press “C” key to delete the heart.

How to Add Stitches

The location of the blinking cursor determines where the new stitch will be added. Blinking cursor should be under stitch 367.

③ Press “ENTER” key.

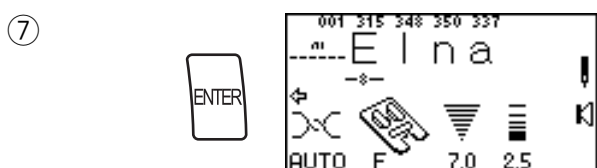
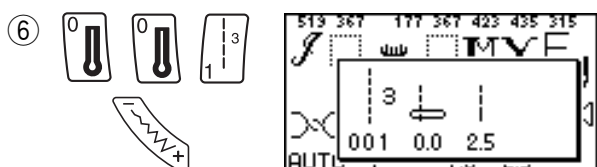
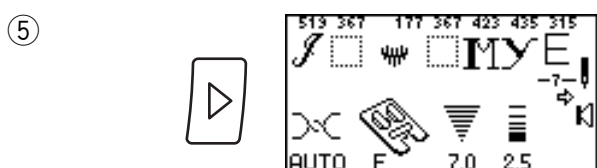
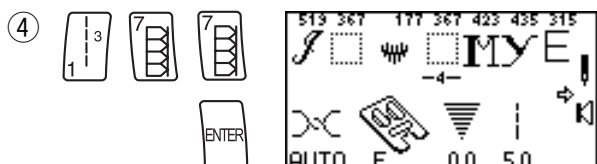
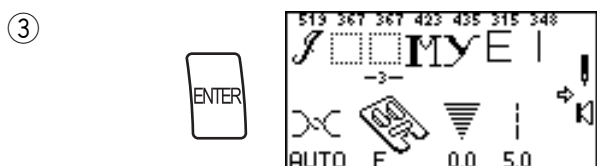
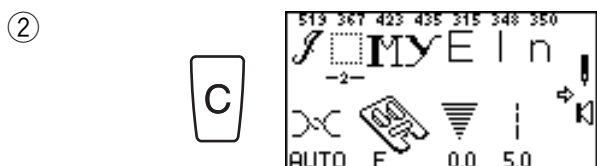
④ Select 177. Press “ENTER” key.

⑤ Press “Review Memory Right” key to move cursor under stitch 315.

⑥ Select 001. Press “Stitch Width/Needle Position” key and change needle position to 0.0.

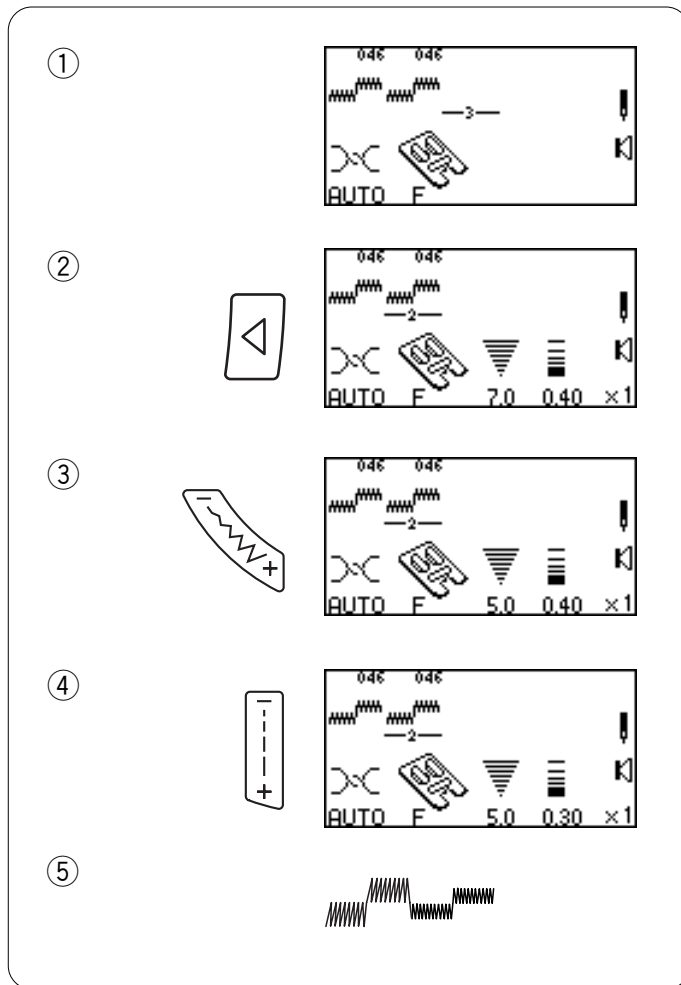
⑦ Press “ENTER” key.

NOTE: It is possible to edit after sewing out a sequence. Before selecting new stitch, press one of the “Review Memory” keys to have blinking cursor appear.



Individually Adjusting Stitch Width or Length

If the cursor is positioned under a stitch in the programmed sequence, the stitch width or length adjustment is applied only to that stitch.



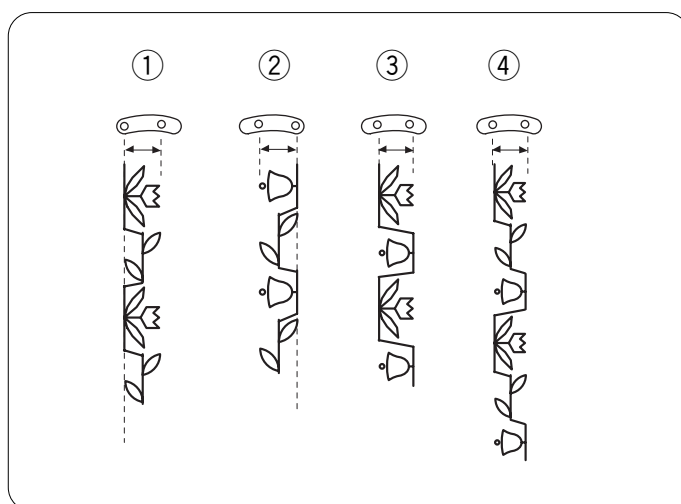
① Program 046 two times.

② Press “Review Memory Left” key to move cursor.

③ Press “–” on “Stitch Width/Needle Position” key.

④ Press “–” on “Stitch Length” key.

⑤ Place fabric and stabilizer under foot and sew.



Alignment of Stitches Within a Sequence

Often stitches in a sequence have different needle start positions – left, center or right. Your machine will automatically determine a common alignment point based on the stitches in the sequence. There are 4 possibilities:

- ① Left and center needle positions are aligned to left.
- ② Right and center needle positions are aligned to right.
- ③ Left and right needle positions are aligned to center.
- ④ Left, center and right needle positions are aligned to center.

Permanent Memory

It is possible to retain a sequence for future use even if the machine is turned off. Simply save the sequence in one of the three permanent memories. Each memory has a capacity of 50 stitches.

Saving Memory

- ① Program 130, 177 and 129.
- ② Press “M” key 1 time to activate Memory 1 (M1).
- ③ Press “ENTER” key to store. (An hourglass will briefly appear.)

NOTE: Activate Memory 2 (M2) by pressing “M” key 2 times. Activate Memory 3 (M3) by pressing “M” key 3 times. Save a sequence in M2 or M3 using same method.

Overwriting Memory

- ① Program 415, 422, 424 and 411.

- ② Press “M” key.

- ③ Press “ENTER” key to overwrite. (An hourglass will briefly appear.)

NOTE: If you do not want to overwrite M1, press “M” key 3 times to exit memory options.

Recalling Memory

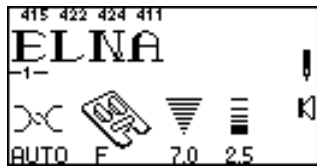
① Press “M” key.

② Press “Mirror Image” key.

①



②



①



②



Deleting an Individual Memory

① Press “M” key.

② Press “C” key to delete. (An hourglass will briefly appear.)

SECTION VII - Heirloom

Pintucks

A beautiful accent to any project. Pintucks should be added to your fabric before cutting out the pattern piece.

Select 1.

Attach blind hem foot G.

Use a washable marker to draw parallel lines for pintucks on fabric right side. Fold fabric on first line with wrong sides together. Place folded edge against guide on foot. Decide how wide you want the pintucks and move the thumb nut ① to move the guide. Sew pintuck. Sew remaining pintucks using same method.

Remove marking lines. Press pintucks to one side.

Bridging (Fagoting)

Two folded edges are joined together by threads over an open area. Use linen, cotton or blend of linen/cotton.

Select 066 or 074. (Create Richelieu trim with 072.)

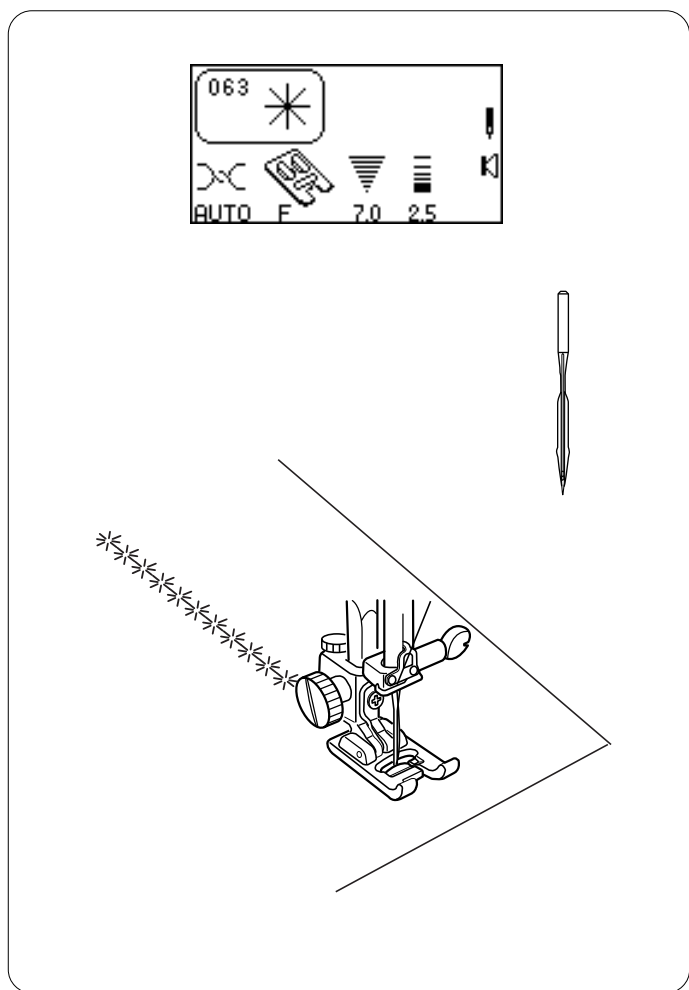
Thread machine, needle and bobbin with fine embroidery thread (50 weight or finer).

Use spray starch to stabilize fabric.

Fold and press under seam allowance to wrong side of fabric. Baste folded edges of fabric on top of thin paper or water-soluble stabilizer ①. Center stitching over the paper/fabric. Lower the presser foot. Sew, catching the folded edges of fabric.

Remove paper or wash away stabilizer and basting stitches.

NOTE: An Elna *EXCLUSIVE* optional accessory is the fagoting plate (available in narrow or wide version). It is a guide for the two folded fabric edges and eliminates the need for paper stabilizer and basting fabric to paper.



Hemstitches

Hemstitching, also known as French hand sewing, was traditionally only a hand sewn art. There are several stitches to choose from that will add an “old world charm”. Best results require the use of linen, cotton or a blend of linen/cotton.

Thread machine, needle and bobbin with a fine cotton embroidery thread (50 weight or finer). Insert a universal needle size #100, #110 or a wing needle (see cautions below). Use spray starch and press to stabilize fabric.

CAUTION: Only insert a wing needle when sewing the stitches listed below. A wing needle is wider than a regular needle. Hand turn the flywheel a few times to ensure needle does not touch needle plate. If needle touches needle plate, narrow the stitch width.

CAUTION: Built-in needle threader does not function if a wing needle is inserted.

Select:

- 063 Daisy
- 064 Point de Paris or Pinstitch
- 065 Turkish
- 066 Venetian or Entredeux
- 067 Rhodes
- 068 Square
- 069 Rickrack
- 070 Filigree
- 071 Mesh

Draw design lines with a washable fabric marker. Sew slowly over design lines.

Troubleshooting Tip: Adjust fine adjustment screw until needle precisely penetrates each repeat hole. See page 19.

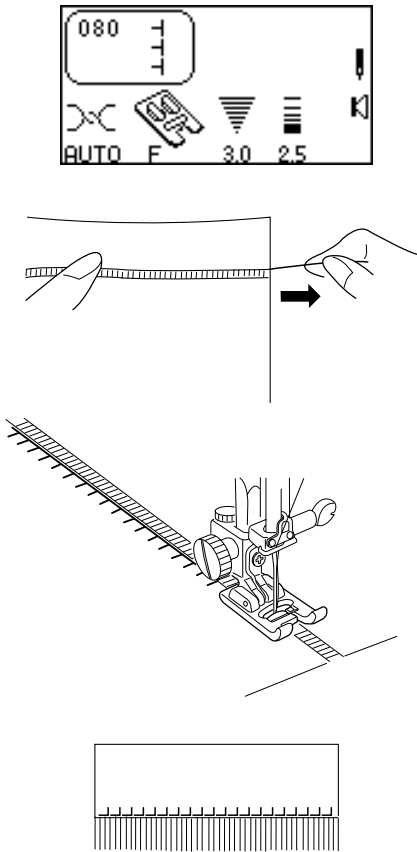
Remove wing needle after sewing is complete.

Fringing

Fringing adds a special touch on table linens and shawls. Choose a firm, woven fabric like linen where threads can be removed easily.

Select 064 (Mirror Image) or 080.

- ① Carefully cut the fabric on grain. Remove a single yarn or thread where the fringing is to begin.
- ② Sew down the left side so the right hand stitches fall in the open space.
- ③ Remove all excess yarn located to the right of stitching and create fringe.

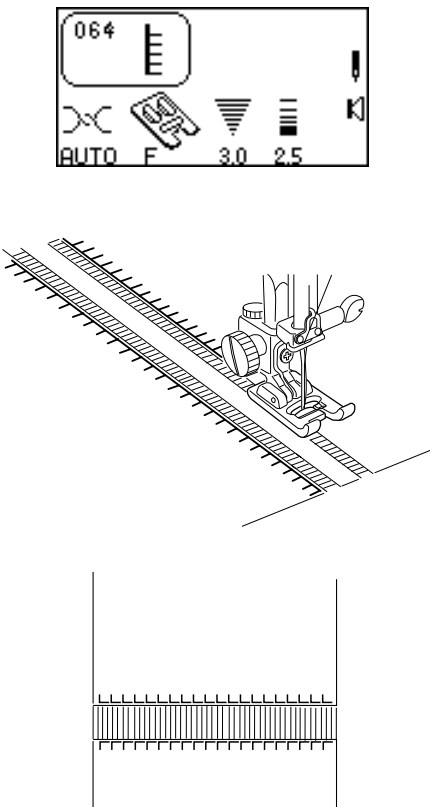


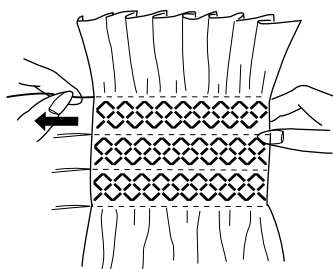
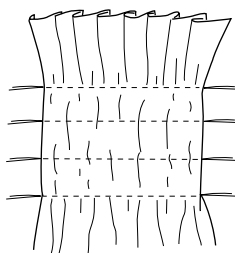
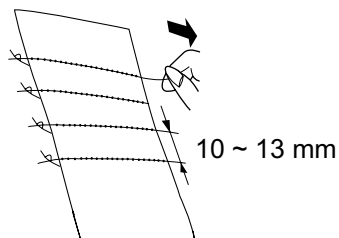
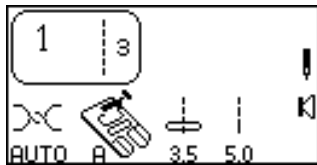
Drawn Work

Drawn work uses the same method as fringing. Choose a firm, woven fabric like linen where threads can be removed easily.

Select 064 or 080 (Mirror Image).

- ① Carefully cut fabric on grain. Determine width of the drawn work and remove one yarn or fabric thread at each end.
- ② Sew down right side, guiding fabric so left hand stitches fall in open space. After finishing left side, turn the fabric around 180°. Sew down other side.
- ③ Remove the yarn or fabric threads between the stitching.





Smocking

Smocking is a delicate, decorative treatment on children's clothing or women's blouses. Choose a soft, lightweight fabric such as batiste, gingham or challis. Cut the fabric three times the finished width.

Select 1.

Increase stitch length to 5.0.

Sew rows of straight stitches about 10-13 mm (3/8"-1/2") apart, across the area to be smocked. (A looser needle thread tension will make gathering easier.)

Tie the threads along one edge. Pull the bobbin threads to distribute the gathers evenly. Secure the threads at the other end.

Select 093, 094 or 095.

Sew smocking stitch between the straight stitches. (Pressure may need to be reduced.) Pull out the straight stitching lines.

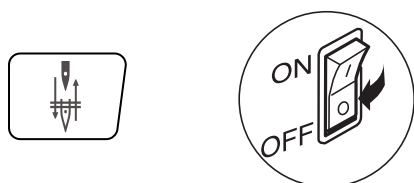
SECTION VIII - Taking Care of Your Machine

Your machine has been meticulously designed and manufactured to give you a lifetime of sewing pleasure. Do not store the machine in a high humidity area, near a heat radiator or in direct sunlight. The machine is self-lubricating, however, the area around the bobbin and hook must be cleaned each time the machine has had extensive use. Do not dismantle the machine further than explained on these pages. Clean the outside of the machine with a soft cloth and pure soap.

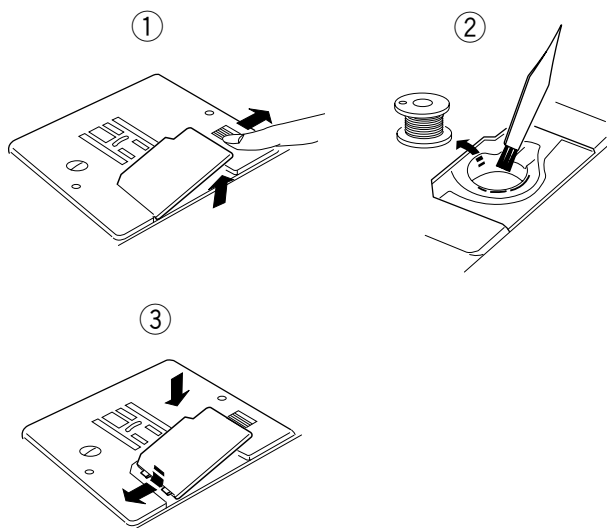
Cleaning the Bobbin Area

Loose threads and dust may cause puckered stitches and thread breakage during stitching. Check for lint buildup after each project is completed.

Press the “Up/Down Needle” key until the needle is raised. Turn off power switch. Unplug the machine before cleaning.

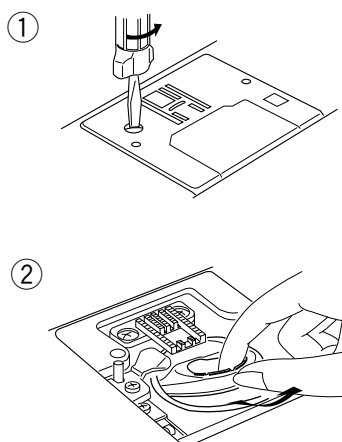


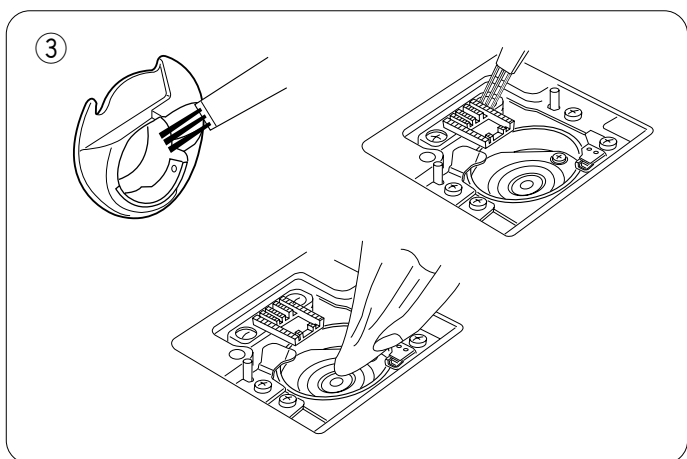
- ① Slide the bobbin cover plate release button to the right to remove the bobbin cover plate.
- ② Take out the bobbin; brush out dust and lint. (You can also use a small vacuum cleaner.)
- ③ Insert the bobbin and attach the bobbin cover plate.



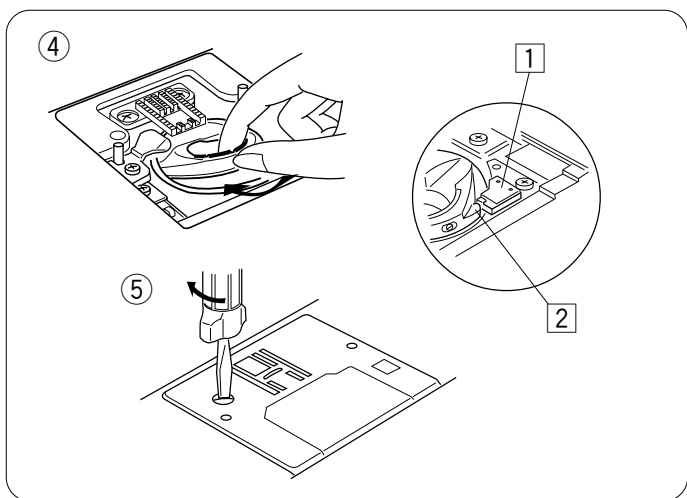
Cleaning the Hook Area and Feed Dog

- ① Remove the presser foot, bobbin cover plate, needle and bobbin. Use the screwdriver supplied with the machine to remove the screw on the left side needle plate.
- ② Remove the needle plate. Lift up and remove the bobbin case.





- ③ Clean the feed dog and hook area with the lint brush. Wipe out gently with soft, dry cloth. (You can also use a small vacuum cleaner.)



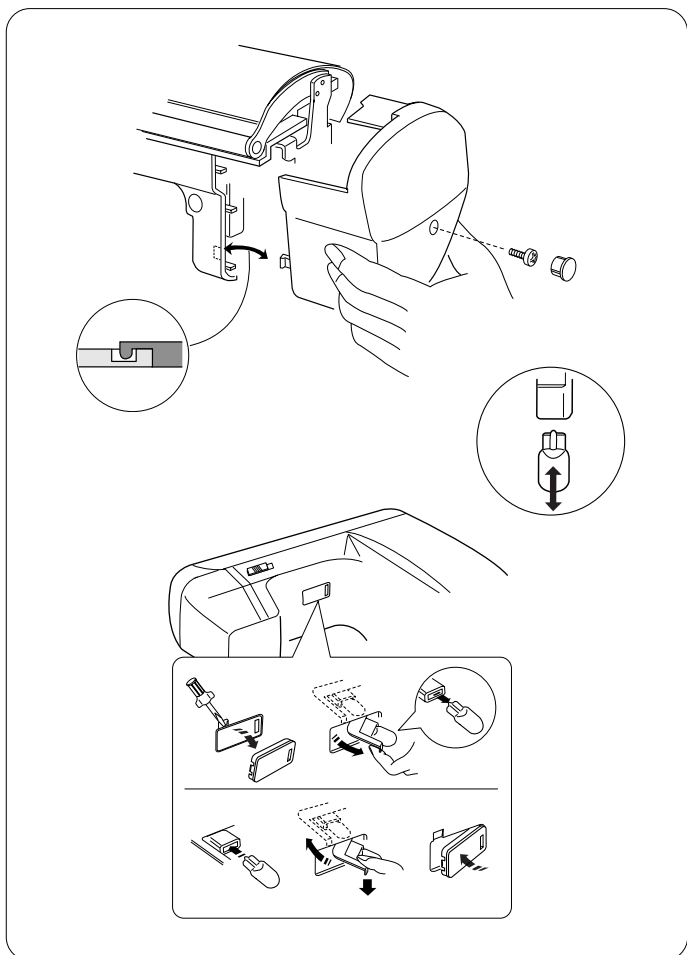
Replacing the Bobbin Case

- ④ Insert the bobbin case so the knob fits next to the stopper in the hook area.

- 1 Stopper
- 2 Knob

- ⑤ Replace the needle plate, inserting the two needle plate guide pins into the holes in the needle plate. Replace the screw.

After cleaning, be sure to replace the needle, presser foot and bobbin.



Changing the Light Bulbs

One sewing light is located behind the face plate. Unplug the machine. Remove screw button and screw. Pull away face plate.

Pull out light socket. Pull out light bulb. Push in light bulb with pins aligned to holes in light socket. Push in light socket.

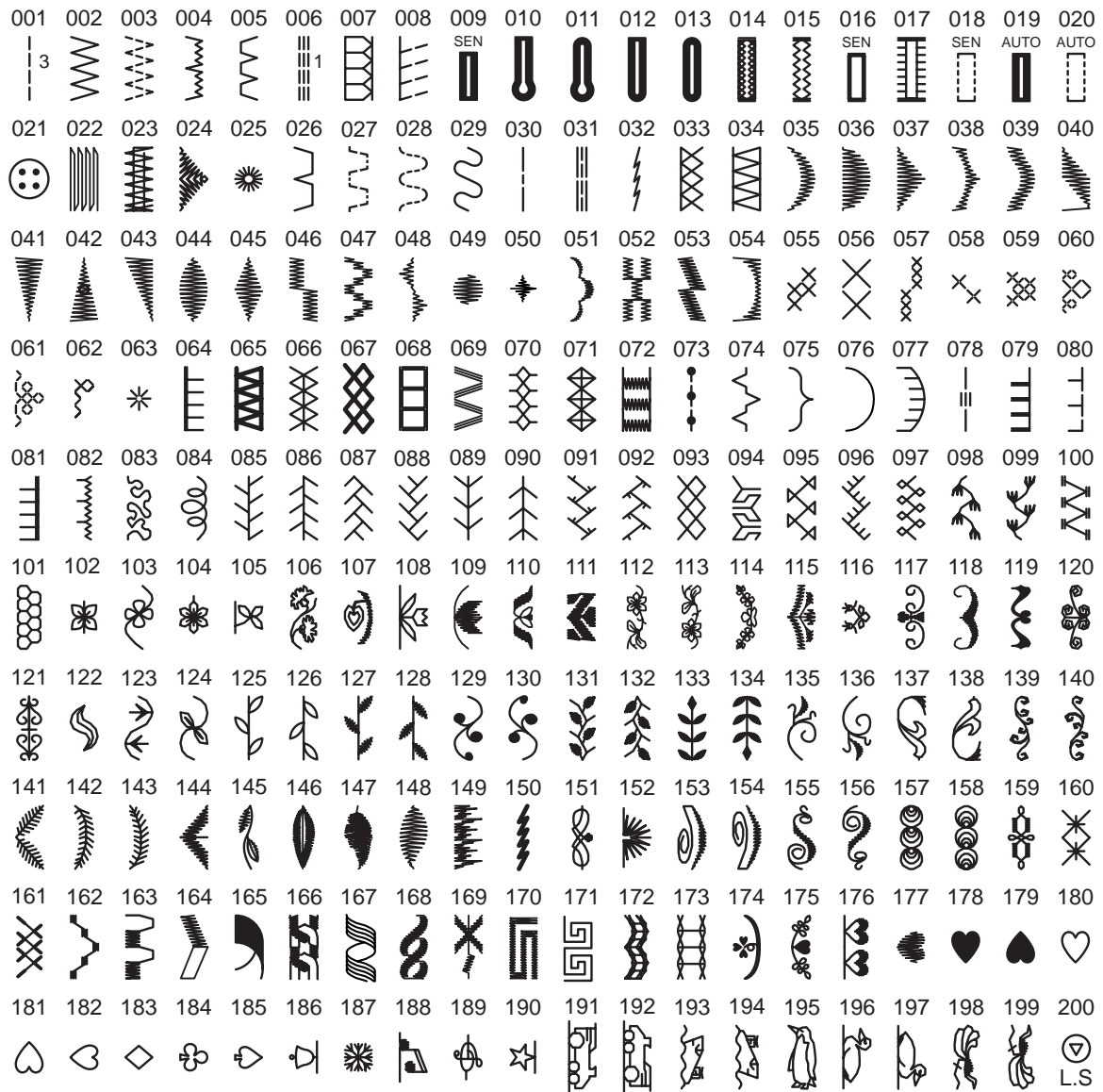
Replace face plate, screw and screw button.

The second sewing light is located over the sewing bed. Unplug the machine. Tip machine back on tabletop. Insert screw driver and pull away light cover. Pull out light bulb. Push in light bulb with pins aligned to holes in light socket.



Replace light cover.

NOTE: Only use same type light bulb rated 12 Volts, 5 watts.

Stitch Chart



Block Letters

301	302	303	304	305	306	307	308	309	310										
1	2	3	4	5	6	7	8	9	0										
311	312	313	314	315	316	317	318	319	320	321	322	323							
A	B	C	D	E	F	G	H	I	J	K	L	M							
324	325	326	327	328	329	330	331	332	333	334	335	336							
N	O	P	Q	R	S	T	U	V	W	X	Y	Z							
337	338	339	340	341	342	343	344	345	346	347	348	349							
a	b	c	d	e	f	g	h	i	j	k	l	m							
350	351	352	353	354	355	356	357	358	359	360	361	362							
n	o	p	q	r	s	t	u	v	w	x	y	z							
363	364	365	366	367	368														
.	&	?	!																
				SPACE	SPACE														

Gothic Letters

401	402	403	404	405	406	407	408	409	410										
1	2	3	4	5	6	7	8	9	0										
411	412	413	414	415	416	417	418	419	420	421	422	423							
A	B	C	D	E	F	G	H	I	J	K	L	M							
424	425	426	427	428	429	430	431	432	433	434	435	436							
N	O	P	Q	R	S	T	U	U	W	X	Y	Z							
437	438	439	440	441															
.	'	?	!	---															

Script Letters

501	502	503	504	505	506	507	508	509	510										
1	2	3	4	5	6	7	8	9	0										
511	512	513	514	515	516	517	518	519	520	521	522	523							
A	B	C	D	E	F	G	H	I	J	K	L	M							
524	525	526	527	528	529	530	531	532	533	534	535	536							
N	O	P	Q	R	S	T	U	V	W	X	Y	Z							
537	538	539	540																
.	ℓ	?	!																


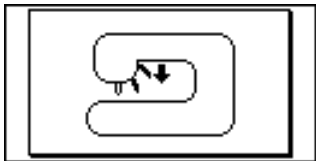


Optional Accessories



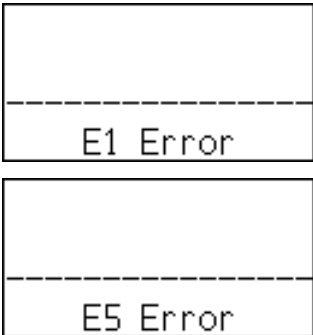
Elna is pleased to offer the following optional accessories for your machine. This listing is current at time of printing but we are always developing new accessories to make sewing easier. Contact your authorized Elna dealer or service center to learn more about the latest innovations OR visit us at our website: www.elna.com.

Part Number	Accessory Name	Part Number	Accessory Name
495100-20	Open Toe Satin Stitch Foot	395719-90	Walking Foot w/Quilt Guide
495470-20	Appliqué Foot	395719-22	Quarter Inch Foot
395719-13	Piping Foot	395719-28	Ruffler
395719-27	Fringe/Looping Foot	395719-12	Gathering Foot
395719-14	Pintuck Foot, Narrow	395719-11	Bias Binder Foot
395719-16	Cord Guide, Narrow	395719-33	Hemmer Foot, 2 mm
395719-15	Pintuck Foot, Wide	395719-20	Straight Stitch Foot
395719-17	Cord Guide, Wide	395719-19	Roller Foot
395719-09	Pearl/Bead Foot 2 mm	395719-21	Teflon Foot
395719-10	Pearl/Bead Foot 4 mm	495010-20	Zipper Foot, Invisible
395719-02	Fagoting Plate, Narrow	395719-78	Button Sewing Foot
395719-03	Fagoting Plate, Wide	424630-10	Rug Making Fork
395719-04	Elastic Gatherer w/Plate, 7.5 mm	395719-23	Special Bobbin Case
395719-05	Elastic Gatherer w/Plate, 10 mm	395721-56	Circular Sewing Device
395719-06	Elastic Gatherer w/Plate, 13 mm	395719-51	Seam Guide
395719-18	Ribbon/Sequin Foot	395731-94	Straight Stitch Needle Plate
495050-20	Embroidery/Darning Foot		
395719-26	Walking Foot		

Warning Messages

Three beep sounds will alert you to machine problems. The LCD screen will show one of these messages.

Message	Reason	What to Do
	Power switch is turned on while foot control is pressed.	Release the foot control.
	Presser foot is up when sewing is attempted. While sewing, presser foot is raised.	Lower presser foot. Lower presser foot.
	The machine was stopped before lockstitch was completed.	Start machine and allow lockstitch to complete.
	The Twin Needle Key has been pressed after selecting a stitch that is not compatible with a twin needle inserted.	Select a different stitch or sew with a single needle.

Message	Reason	What to Do
	The Elongation Key has been pressed after selecting a stitch that cannot be elongated.	Select a satin stitch (035-050).
	<p>Machine stops because thread is tangled in take up lever or bobbin area.</p> <p>Bobbin winder spindle locks during bobbin winding.</p>	<p>Turn off power switch. Remove tangled thread from take up lever and bobbin area. Wait 15 seconds before restarting.</p> <p>Turn off power switch. Remove tangled thread.</p>
	The machine is malfunctioning because of the item indicated. Example: "E1 init error" – error in initialization of stepping motor.	Contact your authorized Elna dealer or service center where you purchased your machine.
	The LCD screen is abnormal.	Turn power switch off. Wait 5 seconds and turn power switch on.

You may hear a faint humming sound coming from your machine's internal motors. This is normal and no cause for concern.

TROUBLESHOOTING

Condition	Cause	See page(s)
Needle thread breaks	<ol style="list-style-type: none"> 1. The needle is not threaded correctly. 2. The needle thread tension is too tight. 3. The needle is bent or blunt. 4. The needle is not inserted correctly. 5. The needle thread and bobbin thread are not correctly under (drawn to the back of) the presser foot when starting to sew. 6. The fabric is not moved to the back when sewing is finished. 7. The thread is either too heavy or too fine for the needle. 	25 18 20 20 28 29 20
Bobbin thread breaks	<ol style="list-style-type: none"> 1. The bobbin thread is not threaded correctly in the bobbin case. 2. Lint has collected in the bobbin case. 3. The bobbin is damaged and does not turn smoothly. 	24 79-80 Change bobbin
Needle breaks	<ol style="list-style-type: none"> 1. The needle is not inserted correctly. 2. The needle is bent or blunt. 3. The needle clamp screw is loose. 4. The needle thread tension is too tight. 5. The fabric is not moved to the back when sewing is finished. 6. The needle is too fine for the fabric being sewn. 	20 20 20 18 29 20
Skipped stitches	<ol style="list-style-type: none"> 1. The needle is not inserted correctly. 2. The needle is bent or blunt. 3. The needle and/or the thread are not suitable for the fabric being sewn. 4. A stretch needle is not being used for sewing stretch, very fine and synthetic fabrics. 5. The needle thread is not threaded correctly. 6. The foot pressure dial is not adjusted correctly. 7. The wrong needle is being used. 	20 20 20 20 25 15 20
Seam puckering	<ol style="list-style-type: none"> 1. The needle thread tension is too tight. 2. The machine is not threaded correctly. 3. The needle is too large for the fabric being sewn. 4. The stitch length is too long for the fabric. 5. The foot pressure dial is not set correctly. <i>Place lightweight tearaway stabilizer under lightweight fabrics.</i>	18 25 20 11 15
Slipping fabric	<ol style="list-style-type: none"> 1. The foot pressure dial is not adjusted correctly. 2. The correct presser foot is not being used. 	15 5-6
Fabric does not feed smoothly	<ol style="list-style-type: none"> 1. The feed dog is packed with lint. 2. The pressure foot dial is not set correctly. 3. The stitches are too short. 4. The feed dog was not raised after being lowered. 5. The correct presser foot is not being used. 	79-80 15 11 16 5-6
Gathering	<ol style="list-style-type: none"> 1. The needle thread tension is too loose. 2. The needle is either too large or too small for the thread. 3. The stitch length is too long for fabric. 	18 20 11
Machine does not work	<ol style="list-style-type: none"> 1. The machine is not plugged in. 2. A thread is caught in the hook area. 3. The bobbin winder spindle is still in the winding position. 	9 79-80 23
Stitches are distorted	<ol style="list-style-type: none"> 1. The fine adjustment screw is not set correctly. 2. The correct presser foot is not being used. 3. The needle thread tension is too tight. 4. The stitch length is not suitable for the fabric being sewn. 5. Use stabilizer for fine or stretch fabrics. 	19 5-6 18 11 use stabilizer
Sensor buttonholes do not work	<ol style="list-style-type: none"> 1. The stitch length is not suitable for the fabric being sewn. 2. Interfacing is not being used with fabrics. 3. There is a gap between the slider and spring holder. 	46 42 46
Noisy operation	<ol style="list-style-type: none"> 1. Threads have been caught in the hook area. 2. Lint has built up in the bobbin holder or hook area. 	79-80 79-80
Machine stops and the message Lo appears.	<ol style="list-style-type: none"> 1. Threads have been caught in the hook area. 2. Lint has built up in the bobbin holder or hook area. 3. The machine is not threaded properly. 4. The fabric is too heavy. 	79-80 79-80 25 20
Machine stops and message E1 ~ E5 appears.	<ol style="list-style-type: none"> 1. Machine needs servicing. 	Contact Elna service center

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